AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Exposition Notes
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'Hail to the Orange'
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Another Ambitious Australian
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Stories of the Week

News that President Eisenhower's voice would be beamed back to Earth from the Atlas satellite was leaked in advance to the National Press Club in Washington.

"I'll bet," wagered one bar stalwart, "that Ike's message will be: 'Fore! I'm playing through.'"

Wholesaler of electric light bulbs propositioned the owner of a theater: "I'd like to supply you with mazdas for your marquee. For free. You see, that will enable me to realize a lifelong ambition."

"Good deal. But what's your angle?"

"For a long time," sighed the wholesaler, "I've dreamed of seeing my lights up in names."

Exposition Notes

Last week's air conditioning exposition in Philadelphia will be covered adequately in this and the following issue of the NEWS, natch. About all Dope can add are a few random notes which Redeker and his serious-minded crew might deem trivia.

Among the thousands of interesting visitors to the NEWS booth, for example, were Cary Grant and Vladimir D. Pavlov.

Cary Grant was a handsome young man (an engineering student) whose mother probably is a romantic-type moviegoer. *Tempus,* how it *fugits!*

Vladimir D. Pavlov is Third Secretary of the Embassy of the Union of Soviet Socialist Republics. His is handsome, charming, impeccably tailored, speaks excellent English, and was knowledgeable about heating and refrigeration.

We'd like to get better acquainted!

Incidentally, this was billed as an "International" exposition. True. We also had visitors from Britain, Denmark, and West Germany.

As usual, the great reward of the exposition for Dope was seeing old friends, talking with hundreds of subscribers, and getting reactions on the job

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Better Health Should Be Greatest Sales Appeal for Air Conditioning

(Conscience of the Industry Editorial by George F. Taubeneck)

BIGGEST PROBLEM of the air conditioning business seems to be that sales (and hence production) are too seasonal. Unless there's a hot wave early in June or July, sales are disappointing, inventories mount expensively—and sometimes the Marketing Director is fired. He didn't guess the production run within miles of sales realization.

We have a lot of sympathy for that fellow. How can ANYONE predict *last winter* what *next summer's* demand for cooling devices will be? It's the most frustrating guessing game of the century.

Can our industry counteract this all-too-human tendency to lock the barn after the horse is stolen? Can we determine how many people will buy air conditioning when it's too hot to work, eat, or sleep? (At that time, of course, everybody else and his Brother Herman is crying for

(Concluded on page 20)

Fedders Room Heat Pump Has 'Full-Time' Compressor

NEW YORK CITY — A new "Four Seasons" heat pump with a compressor that "operates even in below zero temperatures so that a reduced amount of reserve heating is required" was announced as the featured model in the 1959 line of Fedders products introduced here recently.

The new unit has a greater capacity and more efficiency than ever before, the company said.

The new merchandise was presented to distributors at the Fedders Corp. national convention held at the Statler-Hilton hotel. The group of about 500 saw a completely restyled line of room air conditioners and heat pumps, a new "Wall-Fit" series, two dehumidifiers, and "Adaptomatic" central heat pump and cooling models.

Two of the features incorporated in the room air conditioner line are a voltage compensator and a volume control. Objectionable air noise can be completely eliminated by regulating the amount of air flow with a system of electronic controls, the company claims. The design is standard equipment on all of the new models.

The voltage compensator is said to assure efficient cooling "whether the voltage conditions

(Concluded on Page 39, Col. 1)

Ansul Will Handle 'Ucon' Refrigerants

NEW YORK CITY — Ansul Chemical Co. will become nationwide sales agent for "Ucon" brand refrigerants, effective immediately, according to a joint announcement made here by Ansul and Union Carbide Chemicals Co.

Under terms of the agreement, all of Carbide's 46 warehouses will be made available for storage of refrigerants and ship-

(Concluded on Back Page, Col. 4)

It's Official Now! ASHRAE Gets N. Y. Legal Approval

Cecil Boling Is New Group's First President

NEW YORK CITY—The American Society of Heating, Refrigerating & Air-Conditioning Engineers is now officially in existence, final approval having been received from the New York state supreme court and various state administrative agencies of the merger between the American Society of Heating & Air-Conditioning Engineers, and the American Society of Refrigerating Engineers.

Both groups had voted favorably on the merger last Dec. 1, but since both were incorporated under the laws of the state of New York, consummation of merger awaited approval of state agencies. The new society is also incorporated in New York.

Under the provisions of the merger plan, Cecil Boling, Dunham-Bush, Inc., becomes president of ASHRAE. First vice president is Arthur J. Hess, of

(Concluded on Page 39, Col. 4)

* * *

Exposition Reveals Industry Ready for Replacement Market

PHILADELPHIA — The air conditioning industry now has the products not only to make a major push on the unsold portion of the market, but its 1959 products are such that there is "true obsolescence" in much of the presently installed equipment, and thus an opportunity is presented for a major attack on the replacement market.

That would most certainly be the viewpoint of any qualified observer after a look at the exhibits at the 14th International Heating and Air Conditioning Exposition, held the final week in January in Philadelphia. Between 15,000 and 20,000 visitors from the U. S. and 20 foreign countries attended the Exposition.

This story covers in generalized fashioned the new developments and trends which were observed at the Heating and Air Conditioning Exposition in Philadelphia. For a more specific look at some of the product developments, see the picture coverage of the Exposition starting on page 35 of this issue. (This picture coverage will continue for several issues.)

The trend to design in equipment and components that will make a more positive "modernization" story was probably most notable in products aimed at the residential market, but it was also quite obvious in the equipment which will be installed in the commercial and industrial markets.

Better control of humidity, particularly in the comfort cooling phase, either through improvements in design or by the addition of accessories, is a major improvement in residential systems. Also in the cooling phase, refinements in the design of blower-coil units will make it easier to install "add-on" year-round residential cooling systems.

For the heating phase, there are more compact, streamlined, and styled furnaces, with factory assembled models going up to 200,000 B.t.u. capacity, with improved burner and blower equipment. On the hydronics (wet heat) side, a continuing tendency to "package" the ele-

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Worthington Bets on 20% Sales Rise, Bows Integrated Compressor Line

PHILADELPHIA—Worthington Corp.'s 1959 budgets for its Air Conditioning & Refrigeration Div. are based on the attaining of a 20% greater volume than that achieved in 1958, and the company expects industry gains to be not too much less than that figure.

That was the statement of M. M. Lawler, general manager of the division, as he and other company executives discussed the prospects for the coming year during a press conference held in conjunction with the Heating & Air Conditioning Exposition here.

Over-all favorable influences that Lawler sees as contributing to increased sales volume are:

1. General improvement in

(Concluded on Page 8, Col. 1)

HARRISON, N. J. — Worthington Corp. has introduced a new integrated refrigeration compressor line of hermetic and direct coupled drive units, and announces several new products and design refinements in the Air Conditioning & Refrigeration Div.'s line of packaged air conditioners.

These new compressors are designed to operate at 1,750 r.p.m. direct coupled or in a hermetic arrangement. Over-all reduction in size and weight to displacement is realized at these compressor speeds, and major cost reduction results from the use of 4-pole direct-connected motors, eliminating use of belts, Worthington states.

The new line has a range size of from 15 through 80 tons. Not too long ago, it was pointed out,

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American Power Conference Plans Electric Space Heating Session

CHICAGO — A session on electric space heating is among features programmed for the 21st annual American Power Conference to be held at the Hotel Sherman here March 31 through April 2.

The electric heating session is scheduled for 2 to 3:30 p.m. on Thursday, April 2.

G. Gill Freyder, engineer, heating and air conditioning, Commonwealth Edison Co., Chicago, will discuss "Experiences with Commercial and Industrial Heating with Electricity," and J. H. K. Shannahan, assistant vice president, American Electric Power Service Corp., New York City, will talk on "Residential Electric Heating."

Named chairman and co-chairman for the session were Ole A. Hill, Jr., marketing supervisor, commercial - industrial, Commonwealth Edison, and Donald H. Madsen, associate professor of mechanical engineering, State University of Iowa.

The three-day conference is sponsored by Illinois Institute of Technology in cooperation with a group of educational institutions and technical societies. Among the latter is the American Society of Heating & Air-Conditioning Engineers, it is noted.

In all, 20 topics will be discussed at 26 sessions devoted to technical papers. An All Engineers dinner on April 1 will hear an address by Herbert D. Vogel, chairman of the Tennessee Valley Authority, on "Engineers Must Do Better."

Dowagiac Acquires Kalamazoo Furnace

DOWAGIAC, Mich. — Dowagiac Steel Furnace Co. has acquired the stock of Kalamazoo Furnace & Appliance Co., it was reported recently.

The latter firm will become a subsidiary, with Clyde C. Whitcomb continuing as president. The stock changed hands at $5.50 a share.

Hupp Nets $Million

CLEVELAND—In a preliminary estimate of 1958 results, Hupp Corp. reported net profit of about $1 million on sales of $56 million, compared with a net loss of $128,900 in 1957 on sales of $53,413,800.

On the basis of current operations, said President Don H. Gearheart, the first quarter outlook "is very encouraging in all areas of our operations."

Bell & Gossett Reports Highest Net Sales In History—$26,357,790

MORTON GROVE, Ill.—Bell & Gossett Co., manufacturer of hot water heating and air conditioning equipment, reported the highest net sales in the company's history for the fiscal year ended Nov. 30, 1958.

According to R. E. Moore, president, net sales for the year totaled $26,357,790, as compared with $25,665,869 for the year ended Nov. 30, 1957.

Moore also pointed out that earnings per share were equal to the second highest ever reported by the company. Net income, after taxes, totaled $1,708,642, and was equivalent to $1.11 per share on the 1,542,102 shares of common stock outstanding. This compares with last year's earnings of $1,515,938, or 98 cents per share, it was noted.

"As an indication of still further increases in earnings, sales for the first month and a half of the current fiscal year are substantially ahead of the same period last year," it was stated. "The company's present backlog of orders is the highest it has been for the past 10 years."

The report on the financial condition of the company shows that working capital has risen from $9,160,694 (as of Nov. 30, 1957) to $9,257,884 (as of Nov. 30, 1958), and current assets have increased to $12,154,264.

The current fiscal year will mark the first year that the company has manufactured a complete line of air conditioning condensers. The company is introducing a complete line of condensers ranging in capacity from 7½ to 150 tons.

It was further stated that the company's production of "Remite," a leakproof seal used in the manufacture of pumps, is filling current B & G demands and will be available soon to a few other pump manufacturers.

The company recently increased its regular quarterly dividend rate from 12½ cents to 15 cents per share on the common stock. This was in addition to the 2% stock dividend which was paid last Dec. 15.

Isn't it about time You switched to

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for the full profits
you're not getting by selling "price"

What's the use of staying in the price-cutting league when that tiny profit margin means you're only "trading" dollars? Step-up to *full-profits* selling the famous Round Oak line of quality-built heating and air conditioning equipment with the Circulaire performance advantage that assures the complete comfort more people want and will pay for. Get all the facts and you'll be convinced—Round Oak Circulaire holds the answer to your success.

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ROUND OAK

ROUND OAK CO., INC. • DOWAGIAC, MICHIGAN

Quality famous for more than half a century

Gas-Fired Home Heating Equipment Sales Strong

NEW YORK CITY—The Gas Appliance Manufacturers Association reported that "unusually strong" increases in manufacturers' shipments of gas-fired residential central heating equipment, as well as water heaters and ranges, were recorded in December.

Edward R. Martin, director of marketing and statistics for the association, said the gains "undoubtedly reflected a measure of inventory building in distribution channels, as well as favorable conditions in the home construction and modernization fields."

A total of 76,800 central heating units, including furnaces, boilers, and conversion burners, were delivered in December. This was a rise of 50.9% compared with a year earlier, and brought the total for 1958 to 1,121,000, 15.3% above 1957, according to the report.

Cobell Names Sam Boyd National Sales Manager

CLEBURNE, Texas—Former Southwest Conference football coach Sam B. Boyd has been named national sales manager for Cobell Industries, Inc., it was announced by Vice President and General Manager Harold B. Bailey, Jr.

Boyd was head football coach at Baylor university for three years. He resigned there late last year.

Boyd will direct an expanding nationwide sales force for the company's "Rangaire" line of air conditioning and heating equipment, according to Bailey.

$20,000.00 IN PRIZES

FREON® "PARTNERS IN PROFIT" CONTEST

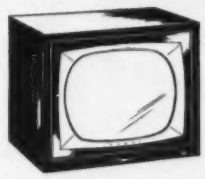
1ST PRIZE CHEVROLET STATION WAGON!

1959 Kingswood with air conditioning, air suspension, power steering, radio, heater, automatic transmission . . . fully equipped . . . $4,000

3-2ND PRIZES

$1,000 UNITED STATES SAVINGS BONDS

5-3RD PRIZES



RCA VICTOR "MARK 21" COLOR TV worth **$495** each

25-4TH PRIZES

POLAROID "HIGHLANDER" CAMERAS worth **$72.75** each

250-5TH PRIZES

WESTINGHOUSE TRANSISTOR PORTABLE RADIOS worth **$39.95** each

-284 CHANCES TO WIN!

Hints to help you win

Your complete air conditioning and refrigeration wholesaler is *your* partner in profit. It will pay you to know and use his services, cultivate his friendship. Here are some of the benefits you get by dealing through your wholesaler.

- **Convenience** of buying at a one-stop supply source. Your wholesaler keeps ample, diversified stocks of high-quality air conditioning and refrigeration parts, equipment and supplies.
- **Immediate delivery** by your wholesaler permits you to give prompt, dependable service—imperative in emergencies.
- **Cost savings** because your wholesaler assumes expenses of inventory, warehousing, shipping, accounting and insurance.
- **Expert technical and engineering help** when you want it. Your wholesaler assists with design problems, figuring material costs; gives catalog service, prices and up-to-date information on new products.

"Freon" Check List

Look for this list of premium qualities of "Freon" refrigerants on your official entry blank. Check the one you consider most important.

- ☐ Time-tested—over 27 years in use—you can't go wrong with "Freon."
- ☐ Stable, pure and dry.
- ☐ Factory-sealed for purity.
- ☐ Nontoxic, nonflammable.
- ☐ Always available—anywhere in the world.
- ☐ Made by Du Pont—backed by years of technical and manufacturing leadership.

Insist on genuine "FREON"—Premium Quality Refrigerants . . . in the cylinders with the gold-hood caps.

DUPONT

Better Things for Better Living . . . through Chemistry

"FREON" PRODUCTS DIVISION
E. I. DU PONT DE NEMOURS & CO. (INC.)
WILMINGTON 98, DELAWARE

*Freon and combinations of Freon- and F- followed by numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.

CONTRACTORS, SERVICE MEN . . . You are eligible to win an air-conditioned 1959 Chevrolet station wagon if your company has bought Freon* refrigerants from a complete air conditioning and refrigeration wholesaler within the contest period (January 26, 1959—May 15, 1959). Read over the simple rules and hints to help you win. Then just tell us why *you* think it's good business to deal with a *complete air conditioning and refrigeration wholesaler.* It's easy! Enter often! You can get official entry blanks through your wholesaler. Ask him about the Freon® "Partners in Profit" Contest *today.*

SIMPLE CONTEST RULES:

1. Contest is open to all firms and their employees who are customers of complete air conditioning and refrigeration wholesalers providing that the customer firm purchases "Freon" refrigerants from a complete air conditioning and refrigeration wholesaler during the contest period (January 26, 1959 to May 15, 1959). Employees of E. I. du Pont de Nemours & Co., its subsidiaries, its agencies or its wholesale distributors of "Freon" refrigerants are not eligible to enter the contest.

2. Check the quality of "Freon" most important to you.

3. Complete this statement in 35 *additional* words or less: "I believe it is good business to deal through a complete air conditioning and refrigeration wholesaler because . . .

Mail your entry to: **FREON® CONTEST, Box 22F Mount Vernon 10, New York**

Entries must be postmarked by May 15, 1959, and received by us at least within eight days of this date.

4. You may enter as often as you like. Your entry must be your own original work and must be submitted in your own name, on an official entry blank, obtainable through your complete air conditioning and refrigeration wholesaler.

5. Prizes awarded by Reuben H. Donnelley Corp., on the basis of their judgment regarding originality, sincerity and aptness of thought. Duplicate prizes awarded in case of tie.

6. Judges' decisions are final. All entries and ideas become the property of E. I. du Pont de Nemours & Co. (Inc.). None will be returned. Contest is subject to federal, state, and local regulations.

7. Winners will be notified about six weeks after close of contest.

Worthington Lines for 1959--

(Concluded from Page 1, Col. 4)

compressors operating at 1,750 r.p.m. had been limited to 7½ hp.

Interchangeability of components between the field serviceable hermetic compressor and the coupled compressor are claimed to reduce to a minimum the local inventory required to render replacement of all components subject to wear.

Dynamic and static balancing of reciprocating and rotating elements before assembly plus use of aluminum piston and rods are said to assure vibration-free operation. The cylinder liner, unloader mechanism, suction and discharge valves and guards are bench assembled and tested as a sub-assembly, and after insertion of piston and connection rod assembly, it is bolted into the crankcase.

For field assembled installations, Worthington announced that it had extended its air handling equipment with units up to 26,000 c.f.m., and that it was offering evaporative condensers to match the entire range of its compressor line.

Several new package units, and some special equipment in the range of sizes used in commercial air conditioning applications, were announced by Worthington.

Most prominent in the line is a series of new packaged air conditioners, in both water-cooled and air-cooled models, in 20, 25, and 30-ton capacities.

These new package units are designed with multiple condensing units, and thus provide step control. Moreover, the design of the unit provides for full-face coil operation and no by-passed air in any step of the step-control operation.

Other new products include a 10-hp. air conditioning condensing unit, with matching air handling section and a new, especially compact 10-ton package unit in both water and air-cooled varieties.

Plans and programs to make it easier for dealers and contractors to sell air conditioning for commercial and industrial applications were also announced.

These include an extension of an inventory and "work in process" financing plan for the installing dealer, whereby the dealer does not start to pay off on equipment until after he has started to install it. The manufacturer gets into the financing picture so that the dealer pays not much more than 3% for this type of inventory financing.

Worthington is also offering a new plan for the leasing of equipment to commercial and industrial establishments. Principal features of the new plan are:

(1) Flexibility in length of terms. (2) Reasonable rates. (3) Requirement that a 100% maintenance service contract be tied in with every lease contract.

In its line of centrifugal refrigeration compressors, emphasis was placed on the recently introduced two-stage open centrifugal compressor, with a capacity range of from 125 to 3,500 tons.

Features of this line include externally mounted bearings to eliminate contamination of lube oil by the refrigerant, new vaneless diffuser principle for noise reduction, design such as to permit removal of complete rotor and internal stationary parts without breaking refrigerant connections, and air-foil type adjustable inlet guide vanes to permit low-load operation.

(LEFT) Cutaway showing design of new Worthington compressor series through 75 hp., which will run at 1,750 r.p.m. Models will be available in both field serviceable and direct-coupled units, with interchangeable components.

(RIGHT) Also new in line is series of air-cooled condensing units in 3 through 10-ton capacities with matching blower-coil units.

The new line of residential air conditioning equipment being offered by the Mueller Climatrol Div. of Worthington Corp. will be reported in a following issue.

Hearing Feb. 16

Former Mitchell Mfg. Stockholders Ask Cory Suit Dismissal

CHICAGO — Hearing on a motion by Bernard A. Mitchell and other former stockholders of Mitchell Mfg. Co. to dismiss the suit filed against them by Cory Corp. was set for Feb. 16 by Superior Court Judge John A. Sbarbaro.

Cory accuses the defendants of misrepresentation and concealment regarding assets and liabilities at the date it purchased the outstanding capital stock of Mitchell.

The motion of the defendants claims the complaint is defective because it fails to allege any cause of action against them and because it affirmatively appears from allegations in the complaint that no damage has actually resulted to plaintiff.

Fred M. Davison Dies

ATLANTA — Fred M. Davison, who was branch manager of Frigidaire Sales Corp. here for 10 years prior to his retirement in 1956, died recently.

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REFRIGERATION, AIR CONDITIONING
and HEATING UNIT NEEDS . . .

Specify Quality-Controlled
PHELPS DODGE COPPER TUBE!

- All tempers and sizes for use in original equipment.
- Straight length tube tempered to meet your bending and expanding specifications.
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New Type Flexible Air Duct Said To Meet Rigid Code Requirements, Save Time, Labor, Money

CHICAGO—A new type of flexible air duct, made possible by the combination of a special, aluminized asbestos cloth and steel spirals, meets the rigid specifications of the Chicago building code, enabling builders and contractors to install high and low-velocity air conditioning systems "with important savings in time, labor, and money," it was reported.

The duct, developed by The Wiremold Co. of Hartford, Conn., during the past eight years, is one of the cost-cutting features of the new Federal Reserve Bank of Chicago, first structure in the area to utilize the new item.

"In older buildings, it should prove even more economical since the duct bends without kinking, making it easy to install around structural members and in cramped quarters with little or no cutting of walls and floors, for installation," the report said.

"Crush and puncture-resistant, all ducts are restorable to their original shape even after a deforming blow, reducing replacement costs."

The new duct is composed of two elements—fabric and metal. The fabric, "Asbeston," a product of the textile division of United States Rubber Co., is flame-resistant, underwriters' grade asbestos cloth (at least 80% asbestos fibers), protected by laminated, polyester-reinforced aluminum foil that serves as a moisture and vapor barrier. The metal is electro-galvanized steel spiral.

"Fabric and metal are locked by an exclusive Wiremold construction which holds the two elements together mechanically for the life of the duct," it was stated.

"Other advantages of the duct are low friction loss and the absence of odor under operating temperatures. The ducts are acid and oil resistant as well, and never need painting, practically eliminating maintenance costs."

Available in lengths up to 20 ft. and with inside diameters ranging from 3 to 12 in., the ducts reportedly have been used successfully "to handle several troublesome types of air conditioning installation problems: connections between branch ducts and the high pressure side of attenuation boxes, connections with vertical risers to under-window units, runouts from attenuation boxes to ceiling outlet octopus system, and vertical takeoffs from branch ducts to ceiling pan-type outlets on low-pressure systems."

The rubber company's aluminized asbestos fabric is also being used to cover pipe insulation in heating, piping, and refrigeration systems in many types of plants and in commercial and institutional buildings, the firm said.

FLEXIBLE air duct developed by The Wiremold Co. is shown here in new Federal Reserve Bank building in Chicago. The new duct bends without kinking and is easy to install around structural members and in cramped quarters. Photo shows how it has been passed over pipe in close quarters to connect main supply duct and dual duct box at right.

Carrier Appoints W. L. Westlake, Theodore Skoglund

SYRACUSE, N. Y.—Appointments of Theodore Skoglund as manager of marketing services and William L. Westlake as manager of the engineering services department for the Unitary Equipment Div. of Carrier Corp. were announced by Russell Gray, company vice president and general manager of the division.

W. L. Westlake

T. Skoglund

All UED marketing services of a non-technical nature will be under Skoglund, who formerly was director of sales training. Westlake formerly was marketing coordinator for the division's Weathermaker Dept.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

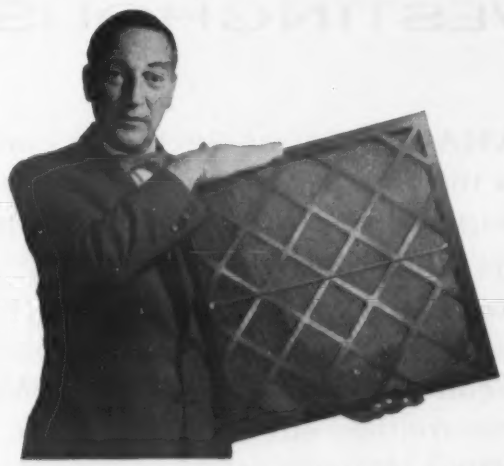
"And now, a word from my sponsor"

says Garry Moore, star of the Garry Moore Television Show, seen Tuesdays at 10 p.m. E.S.T., CBS-TV Network

"I'm Garry Moore, and this is PPG's Glasfloss Fiber Glass Safety-Grille Filter. I want to tell all you gentlemen . . . and any ladies who happen to be listening . . . a couple of very important reasons why the Glasfloss Safety-Grille Filter offers you the most for your money in any heating or air conditioning installation."

"See this? The old metal grille has been eliminated. The Safety-Grille chipboard won't nick hands or cut fingers because there are no sharp edges. This is an important safety angle for maintenance men who must handle hundreds of filters when making a filter bank change."

"This should happen to a filter? Just in case you ever bent a Glasfloss Filter like this, you'd find it would snap back in shape. That's because of its one-piece chipboard construction. No metal grille to get bent out of shape. There's less chance of filter damage in transit, storage and handling."



"Efficient? You bet! But don't take my word for it. Try Glasfloss Fiber Glass Safety-Grille Filters yourself and see how well they perform in actual service. Your local Glasfloss Distributor or PPG Warehouse carry the complete range of sizes. Call them for service, and tell them Garry sent you."

Glasfloss® Safety-Grille* Filters are a product of the Fiber Glass Division of Pittsburgh Plate Glass Company

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh and St. Louis

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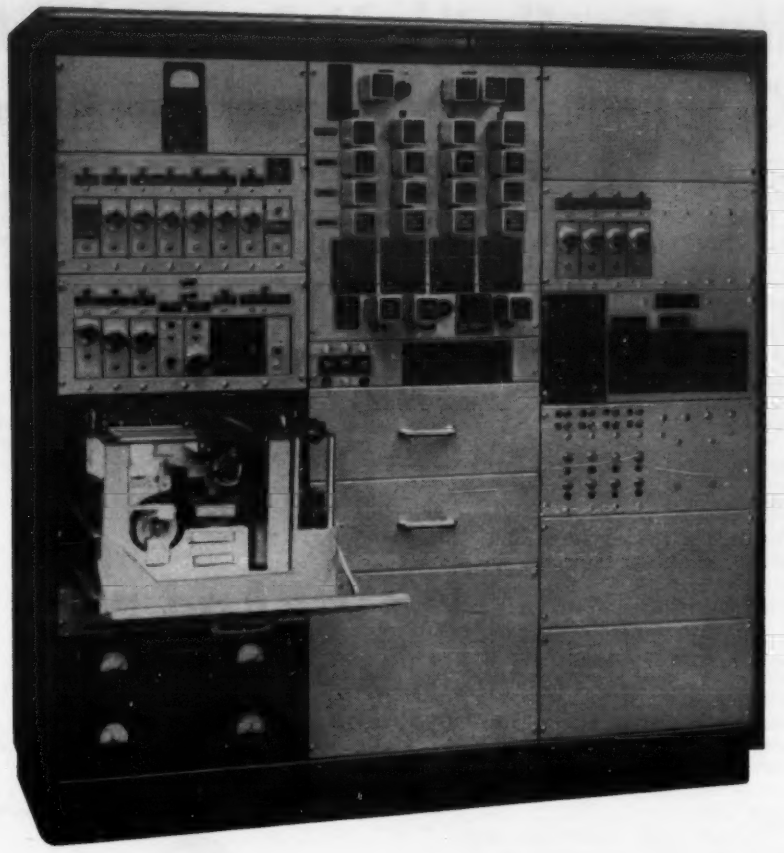

ANOTHER INDUSTRY FIRST FROM WESTINGHOUSE

WAR

WESTINGHOUSE ANALOG RECORDING AIR

WARAC, the *first* electronic computer ever developed for the air conditioning industry. This is a major step toward removing the guess and rule-of-thumb engineering from equipment sizing and application . . . by applying the science of electronic analog computation.

This amazing electronic "brain"—developed by the same Westinghouse Research Laboratories that created the complex control system for atomic submarines, the completely new thermoelectric refrigeration and panelescent lighting—promises to open up a whole new approach to air conditioning engineering. WARAC instantaneously, graphically records in terms of temperature, the effects of all these factors: orientation, insulation, glass exposure, external heat sources, construction material, people load, internal heat sources, shading and outdoor air film resistance.

WESTINGHOUSE

AIR CONDITIONING DIVISION STAUNTON, VIRGINIA

Carl Cannon, Sales Training Director, puts WARAC through its paces with an actual load survey.

WARAC interprets and records the effects of various load factors. Results are given in terms of actual indoor temperatures.

AC

CONDITIONING COMPUTER

PRODUCT OF
WESTINGHOUSE SCIENTIFIC
RESEARCH

Mr. Raymond K. Serfass, Manager for the Westinghouse Air Conditioning Division recently commented, "We haven't even dared guess the limitless possibilities opened up by the development of WARAC. We believe WARAC will ultimately effect fundamental changes in the design and application of all air conditioning equipment because it has presented whole new areas for consideration in cooling a structure.

"Research and development work that went into WARAC during the past two years testifies to our belief that electronic computation of this type will play a greater and greater role in the air conditioning industry. And it gives graphic evidence of Westinghouse's seriousness of intent in the air conditioning industry . . . in the residential, commercial and industrial fields."

J-80589

YOU CAN BE SURE...IF IT'S Westinghouse

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOWS" CBS TV MONDAYS

1959 Commercial, Industrial Market--

(Concluded from page 1)

the American economy, and general acceptance of air conditioning as an integral part of any new commercial building for human occupancy. The application of commercial air conditioning is continuing to increase at a rate faster than the general heavy construction.

No Reduction In Large 'Engineered' Systems

2. No reduction in the demand for large "engineered" systems for new and existing office buildings, hotels, hospitals, convention halls, and like structures. For example, a recent report lists 16 new major office structures privately financed now in the mill for Manhattan Island which will total approximately 10 million sq. ft. of rentable area. Other large cities have equally big plans.

3. The U. S. government has come to recognize air conditioning as an essential service to both its civilian and military employes. Programs are in the mill now for increased use of air conditioning in government buildings and military installations. Also, the industry's products play such a vital role in so many areas of the missile program that the increased tempo of activities in this area is bound to have beneficial effect.

4. At least a mild upsurge in the application of air conditioning to industrial plants can be expected.

Prime factors which Worthington believes will aid in improving its own sales are:

a. A reorganization of its field sales directed to better coverage and service to distributors, dealers, contractors, consulting engineers, and architects. Effective Jan. 1, Worthington established nine zones in the U. S. reporting to a field sales manager at division headquarters (Andy Ward) and staffed with sales engineers, merchandising specialists, application engineers, and field servicemen.

b. Introduction of new product lines, and the extension and modernization of some existing lines (as reported in this issue).

Lawler said that the "cost price" squeeze which the industry has experienced during the past two years will probably continue.

"The rate of obsolescence in this industry is high, and this results in high development and research expenditures," he said. "In the long run the consumer must pay for these development and research costs.

"Unless the manufacturers are able to recover all of their costs, including these research and development expenses, and pay their stockholders a reasonable return, then this industry will not be able to move forward and become a vital force in the American economy."

Lawler wound up his comments by declaring that Worthington would not dilute its efforts as a manufacturer by invading the specialized fields of the engineer and contractor.

Discussing package systems specifically, Andy Ward said that despite the indications that unit sales of such equipment had been on a "plateau" for some years, there were many encouraging signs in this market that a simple count of units doesn't show. Among these, he designated the following:

1. There is "more dollar per job" in package units now than there used to be. This is brought about not only by an increase in the average size of package unit sold, but also by the fact that many jobs use multiple units.

2. Sale of package units was once a "simple, one market business" (retail stores), but in the past few years it has undergone many changes. In the past few years, multiple installation of packages are going into big jobs, designed by architects and consulting engineers, and installed by contractors.

Some examples of such jobs which Ward cited include the installation of 23 7½-ton packages in a New Jersey clinic, and 21 15-ton units for a New York office building.

High Degree of Obsolescence Cited

3. There is a high degree of obsolescence in package units, and the replacement market must surely advance rapidly in the upcoming years.

Ward said that the trend to more "factory assembly" and consequently less field labor in such jobs will undoubtedly continue.

The market for centrifugal refrigerating machines, now being used primarily in air conditioning work, will probably be in the area of from $25 to $30 for the year 1959, declared P. A. McLeod. This figure is for the machines alone, and several millions more will probably be spent for added equipment.

Two of the largest centrifugals which Worthington has built are now being installed to provide 3,000 tons of cooling for the General Services Administration offices in Washington, D. C.

One of the product developments which may come into prominence is the development of new machines, including centrifugals, for use with some of the newer refrigerants.

Frank Nunlist, Worthington group vice president in charge of all air conditioning activities, presided over the press conference, and answered questions from the floor at the close. A query was made as to whether the new field setup had any significance in terms of field distribution policies, particularly with reference to the distributor-dealer type of distribution.

Distribution Practices Vary Widely

In reply Nunlist pointed out that distribution practices in the industry varied by type of product, geographical and climatic factors, nature of the manufacturing firm, and other factors.

"We're not trying to organize the market, but to organize for it," he stated. "What you do in Maine, you don't necessarily do in Texas. What you do in commercial and industrial air conditioning, you don't necessarily do in residential.

"We are finding that those who have remained in the distribution of air conditioning equipment are coming of age, so to speak. Many outlets have found that they can handle both commercial and residential air conditioning. Others prefer to concentrate on one or the other."

Questioned as to Worthington's policies on extended warranties on equipment, Nunlist said that "the company will do what the market demands."

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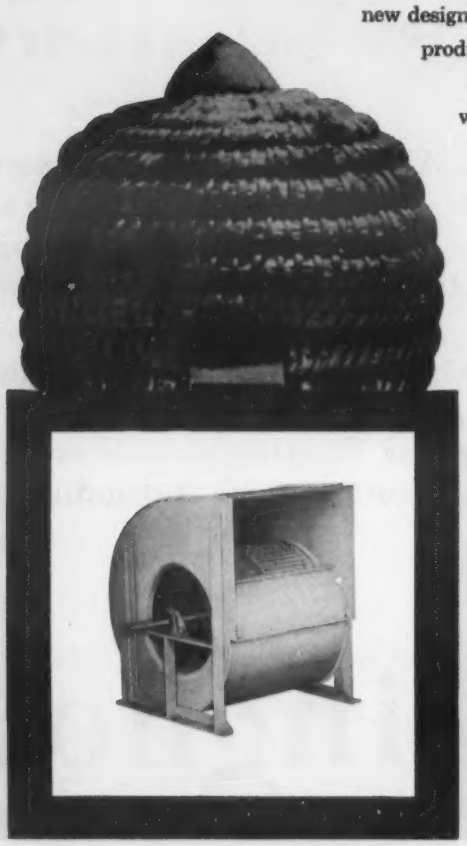
For evaporative condensers, air handling units and heavier heating equipment, Utility has created AM-pak, an entirely new design priced for high production, combining efficiency with flexibility, strength with perfect dynamic balance. Ranging in diameters from 10 to 36 inches, the rugged blower wheel has 64 specially curved blades, features a conical center disc construction and operates at static pressures up to 6¼" W.G. You deliver greater air-power with less horse-power when your equipment is built with AM-pak.



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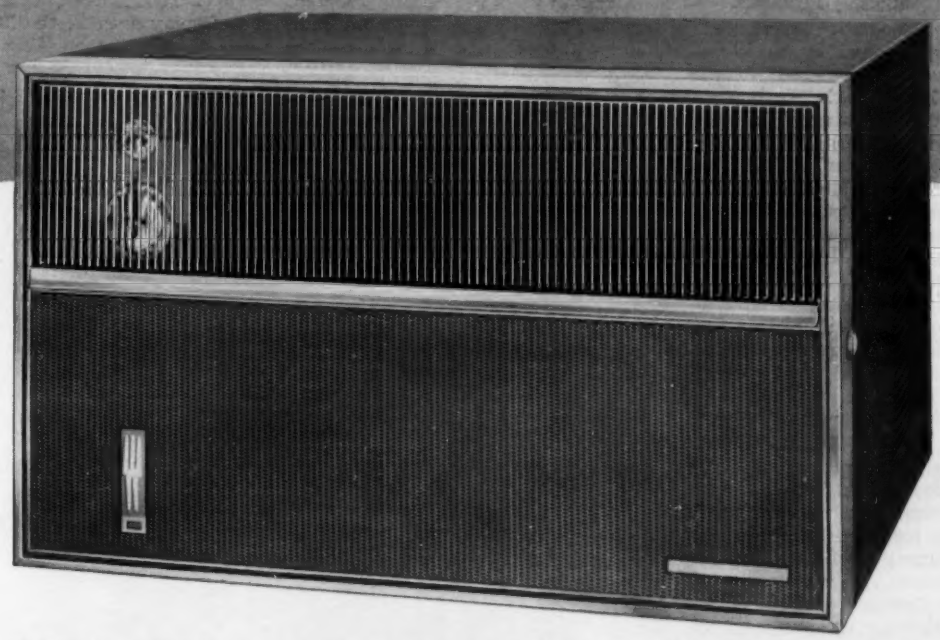
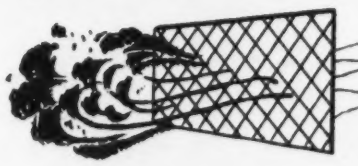


NEW ELECTRO-MAGNETIC AIR FILTER WITH FILTERMATIC SIGNAL

Kelvinator salesmen have a superb selling advantage! Two engineering triumphs combine to give you the greatest room air conditioning advance in years!

❶ ELECTRO-MAGNETIC AIR FILTER

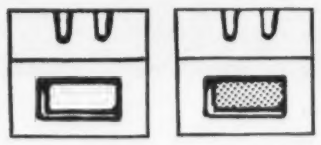


Kelvinator's new Electro-Magnetic Air Filter removes 95% of harmful dirt, dust and pollen as compared to 65% with ordinary filters. Electrostatic charge attracts and holds the smallest particles—even smoke solids—without transformers, rectifiers, or electrical hazard!

❷ EXCLUSIVE FILTERMATIC SIGNAL

This Kelvinator achievement tells when the Electro-Magnetic Filter needs cleaning! Signal shows "white" when it's clean . . . signals "red" when it's dirty! Together, these advances provide the ultimate in air cleaning . . . and an unmatched sales story!

Give yourself the sales and profit advantages of these remarkable engineering achievements. Contact your Kelvinator representative today and get ready for your most successful summer selling season.



CLEAN FILTER
Signal shows "White" when filter is clean.

DIRTY FILTER
Signal shows "Red" when filter is dirty.

OTHER OUTSTANDING "MASTERPIECE" FEATURES: Adjustable automatic thermostat, fresh air intake and room air exhaust, two-directional cooling, two-speed fan. In 1, 1½, 2 and 2½ H.P. sizes.

CUSTOM MODELS in same capacities have styling and basic features of conventional deluxe models but sell at budget prices. Filter is replaceable fiber glass type.

FULL ½ H.P. PORTABLE DELIVERS 4200 BTU'S

. . . ideal bedroom size! Automatic thermostat, and plugs into any 115 volt outlet. Compact size fits any standard window.

"SPACE-SAVERS" ONLY 23" WIDE, 14" HIGH

. . . with low, low prices! Three 1 H.P. models: 115 volt, 7½ amp.; 115 volt, 12 amp.; and 230 volt. Each features 2-directional cooling, two-speed fan, fresh air intake.

"Balanced-Comfort" Design provides every wanted feature in addition!

- ★ MORE FREEDOM FROM HEAT! Correct balance between all parts of the system assures top cooling capacity!
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LIVE BETTER ELECTRICALLY

AMERICAN MOTORS MEANS MORE FOR AMERICANS

Dupont Plaza Center

Single Air Conditioning System Provides Flexibility Needed for Triple Service Bldg.

By George M. Hanning

MIAMI, Fla.—America's first triple service structure—the $11 million Dupont Plaza Center here—is served by a single air conditioning system flexible enough to handle the wide variety of loads placed upon it.

The 12-story building on Biscayne Bay at the mouth of the Miami River contains, side by side, the 301-room Dupont Plaza hotel, the Dupont Plaza Center office building, and the Architects International Bureau of Building Products.

The entire structure is air conditioned by a chilled water system centered around two 462-ton York "Turbomatic" centrifugal water chilling units. Using a Patterson-Kelley steam converter with 229 sq. ft. of heating surface and three Kewanee-Petro 152-hp., 125-lb. steam boilers, the same distribution system is used for heating.

All public spaces and corridors are equipped with Drayer-Hanson year-round air handling units. Hotel guest rooms employ York year-round units with individual control.

One York multi-zone horizontal floor-mounted unit, cooling offices, conference room, and lounge in the architects bureau, is installed in a room with a large plate glass display window where visitors, passing through a corridor, can watch it in operation.

Well Water Used

Compressors and chillers are located in a machinery room on the ground floor at the river side of the building. Although river water could have been used for condensing purposes, wells were drilled instead.

Salt water from the wells is 5° to 8° F. cooler than river water, explained Ed Fritz, engineer for Hill York Sales Corp., which installed the air conditioning equipment. Using it will save thousands of dollars each year.

Condenser water wells, 10 in. in diameter, are sunk 115 ft. deep. An 8-in. plastic drop line protects the well casings from possible corrosion. Two Aurora pumps circulate 1,088 g.p.m. each of salt water through the condensers, raising its temperature from 80 to 92° F. The water is then dumped into the river.

Hill York installed special York marine condensers to eliminate any possible corrosion and insure long condenser life.

If necessary, provision is made to use river water, however. Fritz explained that a pipe runs from the well sump to the river, with the opening below low tide level. A plate covers this opening. But it can be removed in case of emergency. A diver welded the pipe under water, he commented.

The Turbomatic compressors are single stage units using 3,500 lbs. of "Freon-114." They are powered by two Allis Chalmers 400-hp. motors operating at 1,770 r.p.m.

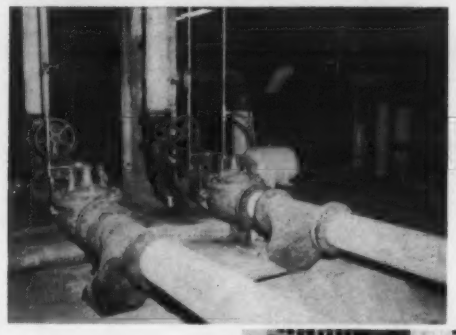
Chilled water is circulated at 1,386 g.p.m. through each turbo. Its temperature is dropped from 56 to 45° F. Approximate evaporator temperature is 39.3° F. and condenser temperature is 97.3° F.

Because the air conditioning machinery is below the flood level Miami can expect under hurricane conditions, the architects—John E. Peterson (deceased) and Frank H. Shuflin—designed the machinery room as they would the engine room of an ocean liner. Water tight bulkhead doors will swing into place in case of a major blow.

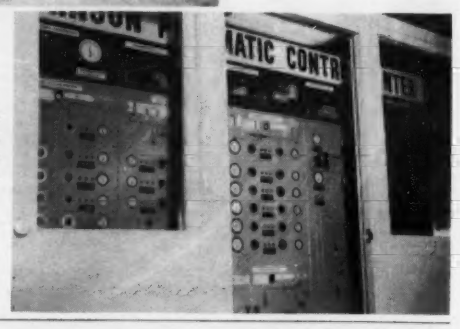
For its first three floors, the Dupont Plaza Center is a three-wing structure 575 ft. long on the north and south sides, 223 ft. on the west, tapering to 52 ft. on the east.

At the fourth floor the building reduces to a 402-ft. by 52-ft. rectangle. It continues in this form to the 12th floor. At the top is a two-story tower for mechanical and elevator equipment.

The architects bureau provides 250,000 sq. ft. of exposition display area in the 3-story west wing of the building.



FROM SALT WATER wells in foreground, condensing water is supplied to two 462-ton York "Turbomatic" water chilling units in the background.



CONTROL CENTER for the triple-purpose Dupont Plaza Center is actually a display in the Architects International Bureau.

OF HERMETIC COMPRESSORS . . .

The reason for these many compressor models is obvious. We feel that to serve the industry, we must provide the equipment they want, when they want it. The best way to do this is to provide several choices in the same horsepower size . . . then our customers can more exactly balance their particular systems with a standard, high production compressor. Over 2000 different Bills of Material incorporating minor variations in these basic models are available. These models incorporate all of the design and operational features required to do a better job for you. These include: various physical sizes – numerous tube and valve arrangements – high and low torque – voltage variations – refrigerant 12 and 22 – air, water, and air/water cooled adaptabilities. Whatever your need, you'll find that Tecumseh has the *right* compressor to fill it.

The variety of applications we serve has dictated a continual effort to keep ahead of the industry's requirements. This effort has resulted in a constantly improved product, generally reduced prices, and increased production efficiency. Proof of Tecumseh's ability to keep pace with industry developments is the fact that there has been a Tecumseh compressor ahead of every industry demand, in any quantity required. Call in Tecumseh today and make your selection from the most complete, up-to-date compressor line on the market.

ON DISPLAY WHILE it works to cool offices, conference room, and lounge in the architect's bureau is a York multi-zone floor mounted unit.

IN PROCESS OF installation is one of seven Drayer-Hanson ceiling mounted air handling units that cool the exposition display area.

CHECKING OPERATION of thermostatic control governing units air conditioning interior and exterior zones in office building is Frank H. Shuflin, architect.

This area, covering two floors, is cooled by seven Drayer-Hanson air handling units ranging in capacity from 7 to 51 tons and totaling 176.4 tons.

Air distribution, as elsewhere throughout the building, is through overhead ducts hidden in the ceiling and discharging through Anemostat or "Agitair" diffusers. Ceilings are divided into modules so that display and office areas can be partitioned off at will.

The office building provides 70,000 sq. ft. of space separated into 176 offices. It is located in the center wing from fourth to 11th floors.

All offices are provided with individual temperature control in anticipation of possible conversion to future hotel occupancy. To permit the greatest possible flexibility, the office areas are divided into 12-ft. wide bays.

Two York air handling units of 400 or 600 c.f.m. capacity cover each pair of bays. One unit handles the exterior zone and the other the interior zone. Duct from each unit has two outlets.

Thus each pair of bays can be partitioned into quarters and each quarter would have its own air conditioning outlet.

Each bay has its own thermostat and York three-way switch. Switches are hooked up so that the cooling units can be turned on from either switch but both switches must be turned off before the units will cease operating.

A 118-ton capacity air handling unit with dewpoint control is located on the top floor of the building. It conditions outside air and supplies it down through a vertical duct to the corridors on each floor. There a horizontal duct running along the corridor ceiling takes fresh air, by way of short take-off ducts to each office. The take-off ducts are dampered so that fresh air supply can be regulated as desired by individual tenants.

Fresh Air Supply To Hotel Guest Rooms

Similarly, a 154-ton unit supplies fresh air to the hotel guest rooms.

The hotel occupies all 12 stories of the east wing of the building. The 301 guest rooms, ranging from single to 3-bedroom suites, are cooled by York air handling units of 200, 300, 400, or 600 c.f.m. capacity, depending on the size of the room and whether it is on the north or south side of the building.

The hotel's public spaces include 13 dining rooms, four cocktail bars, two supper clubs, plus a convention hall and banquet rooms, all air conditioned.

All public spaces, not only in the hotel, but in the entire building, have individual pneumatic control tied in to a Johnson pneumatic control board located in the second floor display area. Temperatures of all spaces can be read and regulated from the board by building engineer Jim Robinson.

Trion electronic air filters are installed in the return air systems of units serving the coffee shop and arcade on the ground floor; dining room, cocktail lounge, and bar on the second floor; and the "Cloud Cafe" supper club and cocktail lounge, and the "Sky Room" convention hall on the roof.

In designing the system, according to Fritz, outside design conditions were 91° d.b. and 79° w.b. Inside design conditions were generally 70° d.b. and 50% r.h. Steam coils for reheat control are provided on all units except hotel and office suites.

J. E. Curley & Associates was mechanical and electrical engineer on the project. Arkin Construction Co. was contractor.

Sales agent for Drayer-Hanson, Trion, and Anemostat products was Sanders & Hollander of Miami. Irving Secord was Drayer-Hanson sales engineer.

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Typical of the twin cylinder models covering the mid range of room air conditioners and commercial applications.
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Models in the high horsepower range of external twins are used extensively in all types of air conditioning.
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Internal mount twins in this range serve widely in central system, air conditioning, heat pump, and commercial applications.
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These four cylinder, external mount compressors are used in larger commercial and residential air conditioning applications including heat pumps.

112 BASIC MODELS, 1/12 THROUGH 5 HP

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16 models between 1/12 and 1 horsepower — high and low temperature — with capacities ranging from 320 to 12000 BTU.

TINY T-LINE COMPRESSORS
7 models between 1/6 and 1/3 horsepower — high and low temperature — with capacities ranging from 525 to 3175 BTU.

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26 models between 1/8 and 1 horsepower — high and low temperature — with capacities ranging from 490 to 9580 BTU.

TWIN CYLINDER (external mount) COMPRESSORS
35 models between 1/2 and 2 horsepower — high, medium, and low temperature — with capacities ranging from 2140 to 24,000 BTU.

TWIN CYLINDER (internal mount) COMPRESSORS
20 models between 1 and 3 horsepower — high, medium, and low temperature — with capacities ranging from 4650 to 37,500 BTU.

FOUR CYLINDER COMPRESSORS
8 models between 3 and 5 horsepower — high temperature — with capacities ranging from 37,500 to 66,500 BTU.

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Use of Non-Cellulosic Insulation In Hermetic Motors Discussed Before ASRE

NEW ORLEANS — "Mylar" polyester-film, epoxy insulation, and "Lecton"—their basic properties and applications for insulation in hermetic motors—were discussed at a conference on the use of non-cellulosic insulation presented before the American Society of Refrigerating Engineers here recently.

Mylar has proved its effectiveness in five years of use in open motors, both in ground and phase insulation, according to R. J. Ward, Chestnut Run Laboratories, Film Dept., du Pont.

Being used in hermetic units now, these polyester materials allow a size reduction and higher operating temperatures, according to Ward. In addition, the physical properties such as high tensile strength, formability, and cut-through resistance are such that they permit easier and more varied workability and processing.

Ward described several laboratory and field tests which were run to determine the thermal and electrical stability of the polyester materials. With some solvents, he said, 1-1.65% extractables at 285° F. after 24 hours were found. However, these extractables are not gummy and should not cause capillary plugging. Indeed, this is not so difficult a problem as is that of moisture which has the greatest effect on Mylar of all the constituents present in a refrigerating system.

There is no doubt but that manufacturers can now safely field test Mylar resins for electrical insulation in hermetic motors, he concluded.

Both polyesters like Mylar and acrylics are rivaled by the epoxy resins, held J. R. Weschler, Permacel.

Epoxies are available in a complete range from low viscosity liquids through semi-solids to solids with relative high melting points, he explained. Epoxies are cured, either at room temperature or by the application of heat, but such curing requires some additive.

The correct additive or curing agent and filling agent can give a wide range of properties—and are chosen depending upon what properties are needed for specific design features.

One difficulty which has been experienced with epoxies is that their thermal coefficient of expansion is enough different from that of metals to cause difficulties under certain conditions. The proper filler can reduce this differential.

Proper curing is indispensable for optimum performance of epoxy systems since an incompletely cured epoxy system will show a high rate of thermal degradation.

Still another plastic family, the acrylics were discussed by O. J. Spawn, supervisor, Finishes Div., Du Pont. "Lecton," as this insulation is known, is suitable for insulating magnet wire, space insulation, and insulation formerly accomplished by varnish type resins, he claimed.

While Formvar, originated by General Electric and now offered by several firms, worked quite well in Refrigerant-12 systems, the introduction and extended use of R-22 created the necessity for a more chemically inert and heat stable insulation. Lecton acrylic resins fulfilled these more stringent requirements, claimed Spawn. Flexibility and abrasion resistance of the acrylics are higher than those of Formvar, he stated. Cut-through temperature is higher and the acrylics manifest better performance in the presence of moisture.

Advantage of 'Lecton'

One major advantage of the Lecton insulation materials is their ready release of moisture. This fact allows quicker and more economical dehydration of completed assemblies.

A new problem has been brought into the motor protection procedures by the increasing use of non-cellulosic insulating materials, stated A. P. White, product development manager, Spencer Thermostat Div., Metals & Controls Corp.

Recalling that thermal protection of compressors is designed primarily to prevent thermal deterioration of insulating materials and subsequent contamination of the system, White held that the advent of non-cellulosic materials allows maximum safe temperatures considerably higher. Therefore, components other than the insulating materials may become limiting factors — lubricating oils, as an example.

"Remember too, that insulation life is a time/temperature function. The length of time at a temperature is more critical than the temperature itself."

On the subject of thermal protection, White explained that the dome mounted overload protector has been generally used for some 25 years. More recently, the hermetically sealed overload device — exposed to the same environment as the windings—is coming into use.

Sees No Difficulties With Underwriters

He foresees no particular difficulty with Underwriters Laboratories and Canadian Standard Association Limits, since even though the use of non-cellulosic materials will allow higher winding temperatures, these higher winding temperatures can be accommodated before the shell limits of UL and CSA become a problem.

While the dome application does not protect against all the things that can happen in a system, in practice they have been found very reliable. However, with the oncoming higher temperatures and increased motor speeds greater use of the hermetically sealed protective device will be made, concluded White.

Speaking from the manufacturer's viewpoint, J. P. Hurtgen, Hermetic Motors Dept., General Electric, stated that the classical rag paper ground insulation, Formvar wire insulation, and cotton lead insulation have a very high moisture content which makes necessary a lengthy dehydration operation.

Nevertheless, these insulating materials have been used on motors up to about 25 hp.

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Not one but two crimps are made in each end of DRYSEAL. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

As for bendability—the soft temper of the copper used in DRYSEAL allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from ⅛" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical.

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Fits in as little as 3⅗ square feet!
Features Dura-Tube Gas Heating Heart
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WIN-SUM-MATIC

Year-round air conditioner

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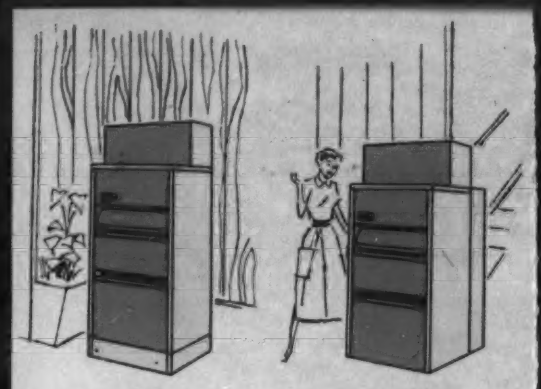
New Janitrol Win-Sum-Matic with front panels removed to show compact design and complete accessibility from front.



WIN-SUM-MATIC Model CVC-85 with bottom filter cabinet.

WIN-SUM-MATIC Model CVC-85 with back filter cabinet.

Take the very finest in year 'round air conditioning equipment and make it *even better!* That's what Janitrol has done and this all-new Win-Sum-Matic is the proof.

Here in one compact "package" is surpassing new beauty with wonderful new refinement and elegance of line and color . . . "the look of the future".

Here is new quietness of operation, with thrift that far exceeds accepted standards . . . a whole new concept of efficiency and dependability in performance.

Here is new ease and convenience in installation . . . new flexibility in the wide range of blower and motor combinations . . . new freedom of service and adjustment accessibility. Here, in fact, is everything you need and more to get your share of the booming air conditioning market.

Take a few minutes now to look over the features and advantages only Win-Sum-Matic offers. Then, ask your Janitrol representative—or mail coupon—for full details on how you, too, can sell and grow with Janitrol!

feature-packed for a mighty Sales Punch!

WIN-SUM-MATIC by Janitrol

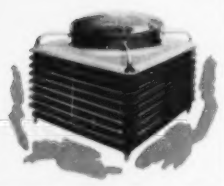
New, Slim "Look of the Future"! New crisp, clean, uncluttered rectangular design with flush front enhances built-in effect . . . saves valuable floor space. New warm-tone neutral colors with gold accent complement decor of any room—harmonize with other appliances.

New, Compact Cabinet. Height of Win-Sum-Matic CVC120-85 (Combination L) is only 6'-8" including outlet plenum. Width 22½", Depth 40". Easily installed in basements with 7' ceilings. Plenum has knockouts on both sides and front for horizontal take-off.

Complete Accessibility from Front. All internal parts are easily reached, simply by removing front panels. Snap-lock panel design. No screws.

Exclusive Season Selector Control. An internal air bypass damper, operated manually or by motor automatically with control by thermostat, provides correct air for heating or cooling without blower adjustments. Damper directs air over heat exchanger for heating, and directly from blower into outlet plenum and evaporator for cooling.

Exclusive PRIDE O' YARD

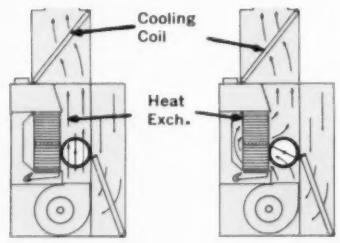


Compressor-Condenser Unit

Special louvered design allows air circulation from all sides while shading condenser from sun at all times . . . boosts efficiency and economy of operation. Rugged, weatherproof construction, with every necessary safeguard for protection of children and pets.

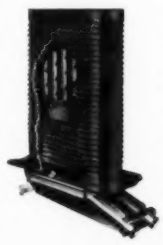
AIR FLOW DIAGRAMS
WIN-SUM-MATIC with Back Filter Cabinet

COOLING HEATING



SEASON SELECTOR (circled) allows straight-through air flow from blower to cooling coil for cooling . . . in winter, directs air through heat exchanger twice for maximum heat extraction.

Exclusive Dura-Tube Heating Heart



Warranted **20 years!** Born of the jet age! New A-19 armor coating, used to protect aircraft engine parts from corrosive, ravaging hot exhaust gases, is fused into all internal and external surfaces and joints—assures permanent sealing, new freedom from corrosion and burn-out. Twin-pass air flow design gives more heating capacity in less space, air passes over heat exchanger surfaces **twice,** resulting in higher heat absorption, true heating economy.

New Waterless Cooling Heart. Compressor-condenser needs only air and electricity, operates at lowest cost. Eliminates water supply and sewage requirements. Reduces service problems. Provides cooling with outside temperatures to 125° F.

New Quietness in Operation. Acoustically treated blower chamber, cushion mounted blower and blower motor, full-floating heat exchanger and air-cooled side panels provide a new concept quiet, smooth performance without annoying vibration or expansion-contraction noises.

Wide Range of Blower and Motor Combinations. Special, new blowers with alternate motors for each size of unit to furnish air deliveries for different cooling capacities in each model—greater installation flexibility.

Sizes to Heat and Cool Any Home. Models with heating input 80,000 to 200,000 Btu. Cooling output 22,000 to 76,000 Btu. AGA approved for natural, mixed or LP gas. (Ask about special approvals for commercial applications.)

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Moffats Ltd., Toronto 15

Please show me how I can sell and grow with the new Janitrol WIN-SUM-MATIC year 'round conditioners and other quality-built Janitrol products for home comfort.

Name_____

Company_____

Address_____

City_____ Zone_____ State_____

Fill in and MAIL TODAY. No obligation.

Sell and Grow with JANITROL

Ask your Janitrol representative for all the facts, or RUSH the coupon to us today!

From JANITROL—a complete line of gas and oil furnaces, unit heaters, conversion burners, air-cooled summer cooling conditioners, combination heating-cooling conditioners.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

we're doing. These latter will be our guide for future months.

Virtuoso of Snores

Hotel space was frightfully tight in Philadelphia during the exposition. Hundreds had to commute from nearby towns in New Jersey. Members of the NEWS delegation doubled up, and Dope drew as a partner a quite remarkable individual.

To keep peace in the family we shan't identify him by name. Suffice it to say that he is brilliant, witty, urbane, suave, and a delightful companion—when he's awake. Asleep he's something else again. If he hits the sack before you do, you've had it, Daddy-O.

Now, a tolerant man can adjust to a normal snore. There's a steady rhythm to it, like the drip-drip-drip of a leaky faucet.

But this fellow gives out intermittently, and with compelling eloquence. Like a slowly revolving cam-shaft, he comes face up at intervals of 20 minutes or so. Then, the music.

His versatility is what gets you. Plus the wide range of his repertoire. He may start out with a light pizzacato, then shift gears into *March Militaire* and the *Anvil Chorus*. Next time he revolves upward he'll do a Strauss waltz once over lightly, followed by *You Had A Dream Dear Cha Cha*.

This intrigues you, and evokes admiration. But when he transpositions from *Chopsticks* in the key of C to a *Bach Fugue* in G-flat minor, a roommate is likely to think "fugue you, ol' buddy," and get out of bed to roll him over.

The writer popped in and out of bed that first night almost as often as a mining camp trollop on payday. We still say, though, whatever this man does . . . he does it big!

'Hail to the Orange'

Happy feature of these International Heating and Air Conditioning Expositions is the annual University of Illinois Alumni banquet. The heating, refrigeration, and air conditioning industry is loaded with Illinois U. graduates (the NEWS, for example, has four: Al Schildhammer, Phil Redeker, Rex Smith, and Dope).

No other college or university sponsors such a shindig. This year's event was staged by Si Rottmeyer, Neb Burnam, and Prof. M. K. Fahnestock.

Prof. Fahnestock, incidentally, probably is the most widely respected and revered man in the entire heating industry.

No Window Cleaner Shall Wash a Wid—Oops

Legislative document clerks took second looks at a printed bill which arrived at the Massachusetts state house, and then sent it back for reprinting.

Text of the bill:

"No window cleaner shall wash any widow that has an air conditioner protruding outside, unless the widow sill shall extend at least 12 in. beyond the outside edge of the unit."

Another Ambitious Australian

The U.S. Defense Department said "no" to an Australian businessman's plan to become the first sponsor of radio commercials broadcast from "talking" earth satellites.

Request for purchase of commercial time on U.S. satellite radio came from our friend H. C. Tiller, managing director of Frigrite Ltd., Melbourne.

In a cable to the senior executive officer of the Atlas missile project at Cape Canaveral, Florida, Tiller asked if his firm could buy time to broadcast 50-word commercials advertising Worthington air conditioners whenever the satellites passed over Australia.

B. G. MacNabb, operations manager of Convair Astronautics, cabled back that he admired Tiller's ingenuity but he was unable to help. He suggested that Tiller contact the Defense Department's Advanced Research Projects Agency.

From Washington came the answer that while Tiller's observation of the satellite's potentialities was to be congratulated, advertising time was not for sale—now or in the near future.

In Harrison, New Jersey, Oscar Cornejo (manager of Worthington's International Advertising Department) and Nathan Gardner (manager of export sales for Worthington's air conditioning division) declared that they shared the Defense Department and Convair's admiration for Tiller's ingenuity.

Mused adman Cornejo, ". . . Tiller may have opened up a whole new advertising medium that's really out of this world."

Behind the Iron Curtain

John Stevens, vice president of the United States Steel Corp., recently has returned from an 8,000 mile trip through the U.S.S.R. Everywhere, he reported, the people were friendly and professed a desire for greatly increased personnel exchanges and trade with the United States.

Although housing in the U.S.S.R. still is far inferior in quantity and quality to that in the United States, Stevens observed substantial apartment construction in all areas—apartments which make available from one to three bedrooms with a bath and kitchen each. Such housing is inadequate in relation to demand.

Steel workers and their union seemed vitally aware that, as production increases, their living standards rise. Workers enjoy an 8-hour day, vacations, incentive bonuses, pensions, and many other conditions usually associated with a capitalistic society, Stevens reported.

Steel workers *don't strike* because, they told him, they know that if they work hard, increase production, conserve materials, and lower costs, they benefit. To strike or loaf on the job, they are convinced, would be against their own best interests. (Laws prohibiting strikes have been repealed.)

Education is eagerly sought. Steel workers voluntarily attend classes in self-improvement. Education and ability are the primary factors governing advancement in the U.S.S.R.

Stevens endorses highly the idea of Americans visiting Russia and *vice versa*. He comments that there is great need of a broad base of better informed opinion as to Russia, its people, and their attitudes.

Amen!

FAN BLADES
8 types. Diameters from 6" through 48"!
NOW REVCOR MAKES ALL 4
BLOWER WHEELS
Single & double inlet. 22 diameters from 3-27/32" to 15", widths 1" to 15"!
HOUSINGS
Sizes for all Revcor Blower Wheels.
INLET RINGS
Sizes for all Revcor Blower Wheels.
Revcor provides you with one centrally located source for dependable service and fast delivery of a complete line of air impellers. With the addition of our new fan line, and the expansion of our research and development facilities, we can provide you with everything you need for more efficient movement of air.
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Descriptive brochure showing the entire Revcor line. Write for your free copy today.
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Demand Is There for 'Modern Business Necessity'

With Commercial Cooling Market Only 23% Saturated, Greatest Opportunity Still Ahead

By David P. Haring, Southeastern Regional Manager, Typhoon Air Conditioning Co., Div. of Hupp Corp.

Once in a while someone in our business will say — "the commercial air conditioning market is saturated, it's too competitive because there are so few prospects remaining."

This statement doesn't ring true with actual conditions. Recently Du Pont published a survey which discloses some startling facts about this very thing. One conclusion from this report is that only 23% of the existing commercial market has complete air conditioning. Yes, this 23% applies to existing commercial enterprise.

Breaking down the figures to more detailed categories: retail establishments—food and drug stores, 20% air conditioned; eating and drinking establishments, 28%; business and repair services, 16%. Other commercial enterprise: offices and office buildings, 40%; hotels and motels, 17%; institutional properties like churches and meeting places, 8% air conditioned; and other public buildings, 23%.

So really we are just getting started in commercial air conditioning, the "back-bone" of our industry. Here are prospects who need air conditioning and can afford to pay for it by one of the various finance plans available. The demand is here because many of their competitors already have air conditioning. This means that right now there is the greatest opportunity for the commercial air conditioning business.

Before anyone raises the question about geographic location and climate conditions, let's look at some more data published in this Du Pont survey.

Dividing the United States into regions with about equal numbers of retail and commercial establishments we have: In the Northeast, only 13% of the retail establishments air conditioned; in the South, only 23%; the North Central only 20%. These retail establishments are the retail food shops, drug-stores, eating and drinking places, and those devoted to business and repair.

The same situation is applicable to other commercial establishments: Northeast, 22% air conditioned; North Central, 24%; South, 42%; and West 27%. This tells a story. What exactly does it mean?

It means that commercial air conditioning has been sold in all the markets in sufficient quantity to prove that it is a modern business necessity. It also means that our opportunity is here today, and it is a better opportunity than has ever before existed in our industry.

And yet there are those who say, "commercial air conditioning with existing business is dead." Nothing could be further from the truth. It is really just gathering momentum. Air conditioning has just now been accepted as a necessity of modern business. This means that the market is ready to receive genuine sales promotion that will produce customer satisfaction with products and installations that fulfill his needs.

In Various Types of Retail Establishments
(In % of Total)

	Wholly	Part	Not
Retail Food & Drug	20	4	76
Eating & Drinking	28	8	64
Personal Business & Repair Service	16	9	75
All Other Retail	19	7	74

In Various Types of Other Commercial Establishments
(In % of Total)

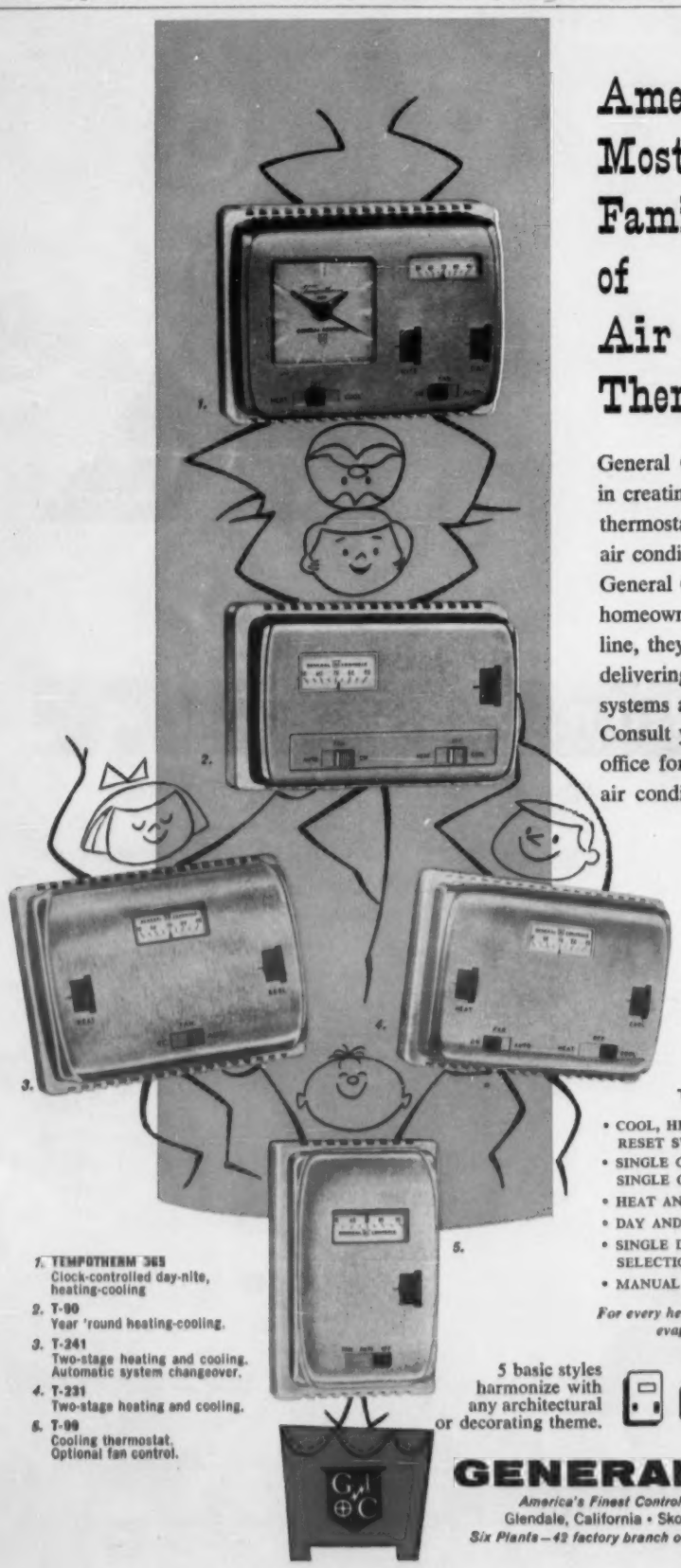
	Wholly	Part	Not
Offices In Office Buildings	40	7	53
Hotels and Motels	17	20	63
Institutional	8	11	81
Oll Other Public Occupancy	23	14	63

Many Products Competing For Commercial Dollar

It would be very nice to have all of this business fall into our laps without any further effort. But modern business is just not that simple. Commercial air conditioning has other competitors that are far more formidable than the "saturation" problem. Restaurants and taverns are continually redecorating, buying new tables, chairs, booths, installing new equipment for cooking, dispensing liquids, food storage, and refrigeration. Grocery stores need new shelves, food storage bins, check-out stations, receiving equipment, business machines, and display equipment. Offices need new furnishings, typewriters, business machines, carpeting, lighting, and water coolers. Doctors and dentists are always considering new equipment and instruments plus furniture, carpeting, and redecorating patients' areas.

Churches and other meeting places are confronted with pressure to improve appearances and do more for their membership. So actually, maybe we've been fighting ourselves without realizing the real competition is outside the air conditioning industry. The competition is for a bigger share of the "commercial improvement dollar."

All of us know about the individual benefits of air conditioning because we've been in the industry for years. But our prospective customers probably don't know or they'd already have air conditioning. Let's re-



America's Most Complete Family of Air Conditioning Thermostats!

General Controls continues to set the pace in creating the kind of *advanced design* thermostats that afford maximum selectivity in air conditioning thermostats. Not only do General Controls thermostats please the homeowner with their beauty and simplicity of line, they also signify *quality*—and prove it by delivering the top performance engineered into systems and related equipment.
Consult your nearby General Controls branch office for complete details on the many air conditioning thermostats available.

ALL WITH MODERN MERCURY SWITCH DEPENDABILITY...

118 FUNCTION VARIATIONS TO CONTROL ANY SYSTEM

- COOL, HEAT, FAN, AUTO, OFF, RESET SWITCHING FUNCTIONS
- SINGLE OR TWO-STAGE HEATING WITH SINGLE OR TWO-STAGE COOLING
- HEAT AND COLD ANTICIPATION
- DAY AND NIGHT CLOCK PROGRAMMING
- SINGLE DIAL OR TWO DIAL TEMPERATURE SELECTION
- MANUAL OR AUTOMATIC CHANGEOVER

For every heating and cooling requirement: gas, oil, coal or electric; evaporative, chilled water and heat pump systems.

1. TEMPOTHERM 365 Clock-controlled day-nite, heating-cooling
2. T-90 Year 'round heating-cooling.
3. T-241 Two-stage heating and cooling. Automatic system changeover.
4. T-231 Two-stage heating and cooling.
5. T-99 Cooling thermostat. Optional fan control.

5 basic styles harmonize with any architectural or decorating theme.

GENERAL CONTROLS

America's Finest Controls for Home, Industry, and the Military
Glendale, California • Skokie, Illinois • Guelph, Ontario, Canada
Six Plants—42 factory branch offices serving the United States and Canada

AVAILABLE!

Largest HERMETIC rebuilding plant has open time for an additional 75 SEALED UNITS per week in our present production facilities.

FOR MANUFACTURERS ONLY

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Commercial Cooling Outlook--

view the actual economic values of air conditioning in commercial business as reported from the various trade associations.

Restaurants have reported an increase in volume of 36% during the hot weather because of air conditioning. Supermarkets show sales increases averaging 30%. Bowling alley attendance has increased volume 25%. Beauty salons report sales increases of 33%, and women's fashion stores show increases averaging 15% during hot weather.

Cooling Must Be Seen As 'Necessary' Investment

These are the facts that must be dramatically and factually presented to prospects so that air conditioning does not become another expense; it becomes a "necessary" investment.

Air conditioning must be considered by the customer as an asset that increases business and becomes so vitally important that he cannot afford to be without it. This is the only way the air conditioning industry can successfully compete for and win more of the commercial improvement dollar.

But this is not by any means the entire answer to profitable air conditioning business.

There are two kinds of commercial air conditioning prospects — "public" prospects and "private" prospects.

The public prospect goes to the lowest bidder for comparable jobs as specified. These are the easiest to work with because most of the time engineering, application, and detailed plans are already prepared. There is usually little room for individual application ideas or techniques to enter the picture. They are the hardest to sell and have the lowest profit.

Private prospects are different. They are the "golden" ones. They require being located on an individual or original basis first. These prospects are located through satisfied customers, from personal acquaintances, from business associations, from advertising or replies from direct mail, or from personal effort with consulting engineers.

Private prospects require individual engineering and application ideas. They are easiest to sell and bring the best profit potential.

There are two kinds of competition for private prospects. Competition from other commodities for the commercial improvement dollar outside the air conditioning industry; and often, competition from other air conditioning installers.

However, the possibility for obtaining the job depends more upon your own talent of application, engineering, installation, service, and salesmanship. It is not a public job and has a better chance of bringing your company a profitable contract.

Stop and think for a moment about the commercial jobs you installed during the past year that were the private prospect type. They require more work, more time and personal effort, and more salesmanship. But when landed, they give you a maximum opportunity for a profitable sale.

Consider some private prospects you may have overlooked or neglected. This is where your most profitable jobs are. Here is where the gold lies in this commercial air conditioning business. And here is where the future of your business, as well as the industry, will grow and grow.

1,197,000 New Dwelling Units Started In 1958—15% Above 1957, Says Labor Dept.

CHICAGO—Figures from the U. S. Dept. of Labor show that 1,197,000 new dwelling units were put under construction in 1958, Nels G. Severin, 1958 president of the National Association of Home Builders, informed that group at its recent convention here.

That represents an increase of 15% over 1957, he commented.

Severin attributed the gain to the plentiful supply of mortgage money, due to prompt government action. But, he warned, with over-all business activity rising the money market is tightening again and interest rates are back to the 1957 high point.

"Although the current backlog of financing commitments will support a high level of housing starts for some months to come," he noted, "Congressional action is necessary if the home building industry is to continue to meet the need of the American people, particularly those in the lower-priced brackets."

J. Stanley Baughman, president of the Federal National Mortgage Association, disputed this. "Mortgage funds now appear to be generally adequate for housing purposes," he affirmed.

"It seems to me," he added, "that builders and lenders must recognize that competition for investment funds is and will continue to be keen and that unless government capital and government regulations are to become major factors in the housing field, private enterprise will need to become more realistic and better prepared to live with the times."

John H. Dickerman, NAHB executive director, foresaw at least a 5% increase in housing starts this year — provided mortgage money is available at reasonable terms."

Third of PHCIB Budget Raised

CHICAGO—The Plumbing-Heating-Cooling Information Bureau announced in mid-January that better than a third of its proposed $257,000 budget for 1959—$90,000—has been raised and is already at work advancing its new activities and continuing the group's established programs.

Already on the rolls as paid-up members for 1959 are 85 manufacturers and 450 wholesalers, the bureau further announced.

"BUY FROM FABRIKANT"

Lowest prices for imported copper, brass, aluminum sheets, coils, manufactured strictly to ASTM and Federal specs. Large stocks all gauges and sizes on hand New York warehouse.

Orders also solicited for forward shipments.

Stocklist and prices upon request.

FABRIKANT METALS CORP.
620 Fifth Ave. • New York 20, N.Y.

"SERVING THE METAL INDUSTRY FOR OVER A QUARTER OF A CENTURY"

GET THE BIG 12 WITH BRYANT

Only BRYANT offers ALL... from ONE SOURCE!

- *Gas and Oil-Fired Furnaces*
- *Gas and Oil-Fired Boilers*
- *Gas and Electric Air Conditioners*
- *Automatic Gas Unit and Duct Heaters*
- *Conversion Burners*
- *Suburban Line for Project Builders*
- *Command-Aire Line for Quality Homes*
- *Automatic Water Heaters*

No other maker of home-comfort equipment offers so many exclusive features. No other line is so complete. Get the profit facts. Write or phone your Bryant distributor, or contact Bryant Manufacturing Company, Indianapolis, Ind. In Canada: Bryant Manufacturing Ltd., Toronto, Ontario.

bryant

NO OTHER LINE GIVES SO MANY EXCLUSIVE SALES-MAKING HELPS!

1 **MULTIPLE LINES:** Furnaces, Air Conditioners, Boilers, Water Heaters, Unit Heaters—widest selection of models and prices to fit any market.

2 **EXCLUSIVE FEATURES YOU CAN SELL**—backed by 51 years of engineering leadership.

3 **FAST DELIVERY**—from complete local stocks.

4 **COMPLETE FINANCING AND CREDIT ASSISTANCE**—suited to your needs—administered by local people who know *you*.

5 **ON-THE-SPOT COUNSEL**—sales, design, engineering, service—from your nearby distributor or factory branch.

6 **SALES AND TECHNICAL TRAINING**—by experienced specialists—both locally and at the Bryant plant.

7 **BUSINESS MANAGEMENT GUIDANCE** from factory and distributor, to help you cut costs, get more business, make more money.

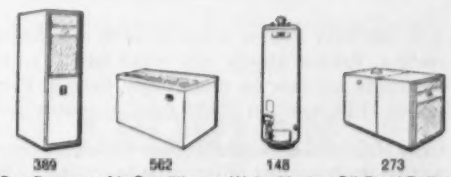
8 **LOCAL AD CAMPAIGNS**—field tested—with Bryant factory and distributor participation.

9 **SOUND SELLING POLICIES**—in effect for over 50 years—protect your business and profits.

10 **BRYANT'S NATIONAL REPUTATION** with architects, engineers, builders, utilities and home owners helps *you* sell.

11 **GAS AIR CONDITIONING** gives you big opportunity to GROW—close tie-in with Gas Utility promotions.

12 **BRYANT'S FINANCIAL STRENGTH** protects your *future*.



...YEARS AHEAD IN YEAR 'ROUND COMFORT!

For International Minerals & Chemical

Continuous Floor Level Return Air Grille Around Perimeter Overcomes Cold Walls

SKOKIE, Ill. — What might have become a serious problem in cold wall effect was successfully averted in the new International Minerals & Chemical Corp. administrative and research center here.

The center consists of five buildings completed last fall and a research center built on a 21-acre site in 1951. New buildings include a five-story administration building, a three-story structure housing staff and operating divisions, a single-story electronic center, a one-story employes' lounge, and a one-story cafeteria.

As in many modern buildings, glass is used extensively in outside walls. But, unlike most others, no baseboard radiation is provided. Instead the building is heated and cooled by use of radiant ceiling panels and a forced air system through ceiling diffusers.

To overcome the cold wall effect, a continuous return air grille was installed at floor level around the perimeter of each floor of the building, according to Gene Bednarz of the Robert Irsay Co., installing contractor.

Although the grille has the effect of being continuous, it was installed in sections. Each section is connected to a continuous return air duct plenum that was tapped by boots to the sheet metal return air ducts below the floor slab.

Return air outlets are Agitair Type "F" Stripline clipped in place to angle framing.

"The continuous return air grille was the satisfactory solution," Bednarz commented. "With outside temperature falling as low as -16° F., the glass has stayed crystal clear at all times. Space temperature 12 in. from the glass has been maintained at 72° F."

The International Minerals & Chemical complex actually combines two systems of year-round air conditioning that dovetail in their operation.

ADMINISTRATIVE & Research Center of International Minerals & Chemical Corp. from Southwest across main plaza. Buildings shown are, l. to r., operations building, operations annex, administration building, employes' lounge, and cafeteria.

Both are provided with chilled water from a 450-ton Trane "CenTraVac" chiller mounted in a penthouse atop the administration building. Hot water comes from a boiler in the basement of the building.

The penthouse roof, incidently, serves as a heliport. The Administration building is claimed to be the first office building in the country with its own heliport incorporated in the original design.

One system is the Burgess-Manning ceiling system. It provides radiant heating and cooling. A continuous grid of welded pipe is installed above the metal acoustical ceiling and directly below the thermo-acoustical blanket in the ceiling. A summer - winter change - over switch automatically closes and opens key valves in proper sequence.

Operation of this system is based on changes in outdoor temperature.

The two multi-story buildings are each divided into north, east, south, and west zones. Each zone is provided with its own reset and humidity controls.

Water temperature is reset electronically both summer and winter through an electronic panel that senses outdoor temperature and resets a three-way mixing valve in the main supply to the ceiling panels. Different reset schedules are provided for summer-winter operation.

Condensation Controlled Electronically

To prevent excessive condensation during summer operation, an electronic humidity control is provided. When humidity conditions approach dewpoint, the electronic humidity panel assumes control of the three-way mixing valve to raise circulating water temperature. There is no humidity control on the heating cycle.

The other system is a forced air duct system, with chilled or hot water supplied to coils in Sturtevant air handling units located in penthouses on the administration and operations buildings and in the basement of the single-story structures. This system is controlled by thermostats in the spaces cooled. They reset face and by-pass dampers according to changes in internal heat load.

Recirculated Air Passes Through Electronic Filter

Incoming and recirculated air is passed through a Westinghouse "Precipitron" electronic filter, then over chilling and reheat coils for humidity control. The air, 25% fresh and 75% recirculated, is then distributed through supply ducts in the

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

BEFORE YOU BUY, THINK:

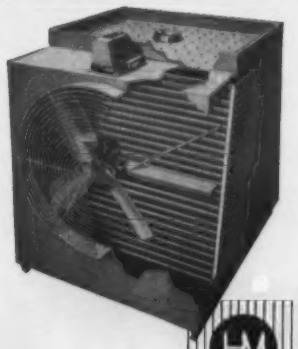
Will fungus attack your cooling tower 2 years from now?

Not if it's a Halstead & Mitchell cooling tower with a 20-Year Guarantee

The specially treated wood decking in H&M towers resists rotting, fungus attack and algae which accumulates and obstructs air flow in most other towers. Performance remains "like new" in H&M cooling towers year after year.

Only Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or fungus attack.

Other H&M features for unusually low maintenance include permanently sealed fan bearings, and a heavy gauge steel cabinet protected against corrosion by three plastic coats applied *after assembly*. Be sure. Ask your local wholesaler for H & M towers, or write to Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



H & M COOLING TOWER WITH PRESSURE TREATED DECKING

HM Halstead & Mitchell

Water-Cooled Condensers · Cooling Towers · Air-Cooled Condensers · Finned Coil Products

ceiling of each floor to low velocity diffusers over the working areas.

In the two multi-story buildings and in the electronic computer center, distribution is through Agitair Type RCTC outlets to fit 12 by 12-in. metal ceiling tile sizes.

In other areas and in the executive offices on the fifth floor of the administration building, diffusion is through Agitair Type "H" Stripline of varying widths for proper c.f.m. and throw of air. All were sized to keep a low decibel level.

"In most cases where the Type H Stripline was used," said Frank Morgan of the Roy O. Nelson Co., which supplied the Agitair equipment, "the duct collar was continuous in the bottom of the duct run.

"This varied from 12 ft. in the executive offices to more than 60 ft. in length in other areas. It was not necessary to make any special provisions in the ductwork to control the flow of air through the outlet. Quantity of air was controlled by means of a damper."

Return air is picked up by the continuous grille around the perimeter of each building. All toilet rooms, utility rooms, kitchen, projection rooms, etc., are ventilated on a direct exhaust system.

5-Building Control Center Is In Administration Bldg.

Operating engineers are provided a visual description of the mechanical system provided for heating, air conditioning, and ventilating the five buildings on a Barber-Colman electronic schematic control center located in the basement of the administration building.

From this central location, the various fan motors and circulating pump motors may be started and stopped. Fresh air, return air, and exhaust dampers may be positioned.

Temperature in the mixed air plenum and on the hot deck and cold deck may be read and changed, thereby adjusting temperatures in any selected area as desired. Day-night changeover and summer-winter changeover of individual fans in the air supply units in various buildings can be accomplished.

Lamp Warns of Fan Stoppage

Pressure sensing elements in the supply and exhaust fan ductwork light a warning lamp and sound an alarm should any fan stop because of an emergency.

Adjacent to each wall-mounted thermostat throughout the five buildings is an electronic temperature sensing element. Each of these 114 elements is shown diagrammatically and labeled on the schematic control center.

By pushing a button corresponding to a thermostat location in a particular building, the operating engineer can read the temperature at the thermostat.

For each pushbutton, a jack is provided whereby the engineer can record the temperature for any period of time on an eight-point temperature recorder in the panel.

From the panel he can selectively control temperature and fresh air in particular areas such as the cafeteria, auditorium, or any given section of offices without energizing all other units during a period when all offices would not be in use.

The control center similarly controls other motors and certain refrigeration controls.

Along with the CenTraVac in the administration building penthouse are six No. 4260 Marley Aquatowers, and attendant condensation and recirculating pumps.

Why was this system adopted?

"It was specifically selected with economy of operation in mind," according to Bednarz. "Chilled water is a much more efficient fluid than cold air. By cooling a large part of the conditioned spaces with chilled water direct, an operational savings is being realized.

"The metal pan ceilings, in addition to their acoustical qualities, also are maintained easily and inexpensively."

Perkins & Will, architect and engineer, designed and supervised the entire installation. Turner Construction Co. was general contractor.

Callix E. Miller, A.I.A., was International Minerals & Chemical Corp.'s project planning engineer in charge of construction.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

National Association of Frozen Food Packers Convention
March 1-4, Conrad Hilton hotel, Chicago.

Gas Appliance Manufacturers Association
April 1-3, Americana hotel, Bal Harbour, Fla.

Edison Electric Institute
April 5-9, New Orleans.

Oil-Heat Institute of America
April 29-May 4, Seattle.

Air-Conditioning & Refrigeration Institute
May 3-6, The Homestead, Hot Springs, Va.

Industrial Heating Equipment Association Meeting
May 17-20, The Homestead, Hot Springs, Va.

American Society of Heating, Refrigerating & Air Conditioning Engineers
June 22-24, Lake Placid Club, Lake Placid, N. Y.

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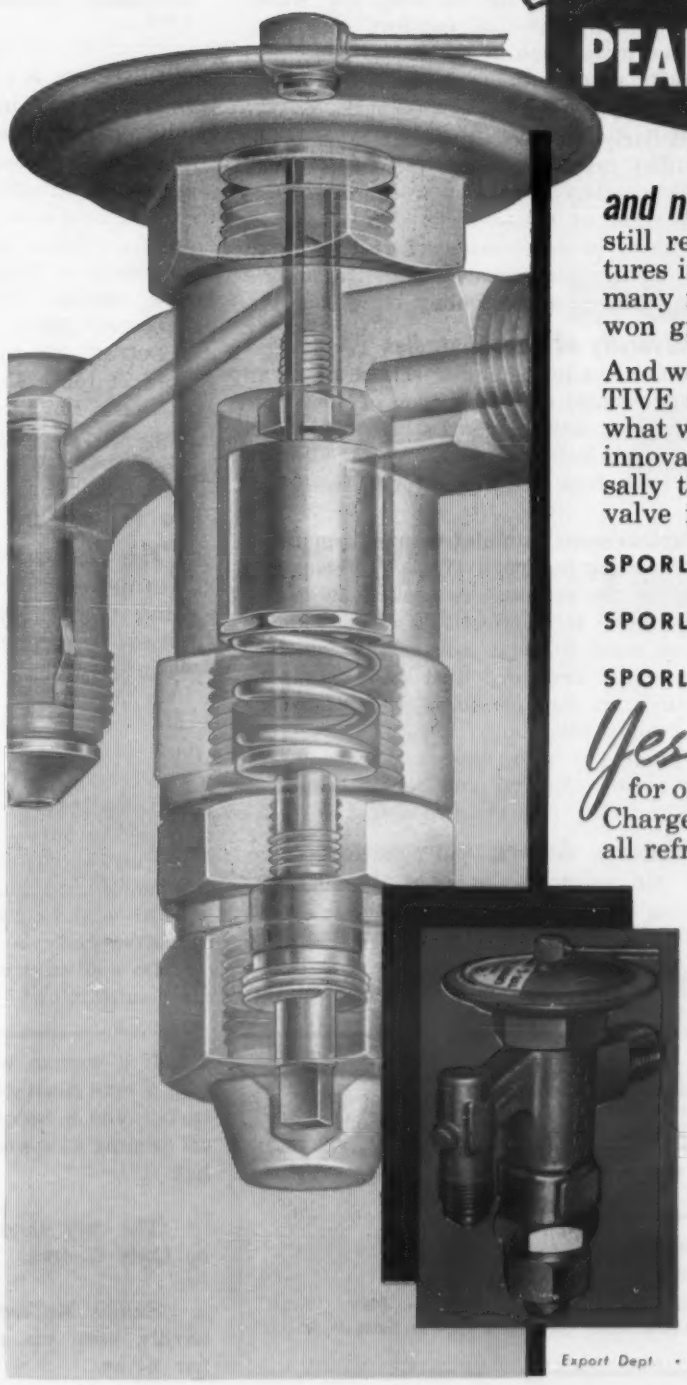

and no wonder... for Sporlan "G" Valves still retain many of the basic design features introduced in 1934, have incorporated many new engineering features and have won greater acceptance, year after year.

And we're proud of the SPORLAN SELECTIVE CHARGES too...for after 25 years, what was originally a Sporlan Engineering innovation has now been adopted universally throughout the entire thermostatic valve industry.

SPORLAN "C" CHARGE
for suction temperatures ABOVE ZERO

SPORLAN "Z" CHARGE
for suction temperatures BELOW ZERO

SPORLAN "X" CHARGE
for extremely low temperatures

Yes... **Sporlan points with pride to 25...** for only Sporlan "G" Valves with Selective Charges can give you Peak Performance on all refrigeration applications!

Your Sporlan wholesaler has the latest literature. Ask for it when you order your next "G" valves...and be sure to order Sporlan Catch-Alls, See-Alls and Solenoids along with them and get Peak Performance Right Down the Line!

SPORLAN VALVE COMPANY
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They'll Do It Every Time

by Jimmy Hatlo

HOWCUM DEPT. THE GUYS WITH THE COMMON NAMES--YOU'D THINK THEY'D USE A DISTINGUISHING MIDDLE INITIAL-- BUT, NO!
HE DIDN'T LEAVE HIS NUMBER--JUST HIS NAME--JOHN JOHNSON--THEN HE HUNG UP....
THERE'S EIGHTY-FIVE JOHN JOHNSONS IN THE BOOK--WOULDN'T YOU THINK HE'D AT LEAST USE A MIDDLE INITIAL...
HOWEVER, TAKE A NAME YOU JUST COULDN'T FORGET--IT'LL BE DECORATED IN THE MIDDLE AND AT BOTH ENDS YET!
WHO SHALL I SAY IS CALLING, PLEASE?
FROMAGE Z. NOONITNEY.... FROMAGE Z. NOONITNEY, THE 3RD, THAT IS...
THANX AND A TIP OF THE HATLO HAT TO MYRTLE C. OLSON, 326-4TH AVE., N.E. CAMBRIDGE, MINN.
12-19
JIMMY HATLO
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Better Health Should Be Greatest Sales Appeal for Air Conditioning

(Concluded from page 1)

installation or service—thus compounding and confounding an impossible-to-solve shortage of seasonably employed skilled labor.)

Alert merchandisers may have an interesting method of combatting this problem of human procrastination.

They can sell air conditioning any time in the year—winter, fall, or spring—as an aid to BETTER HEALTH.

For example: a recent editorial in AIR CONDITIONING & REFRIGERATION NEWS presented the idea that air conditioning can be a positive preventive of lung cancer and other respiratory diseases. (Reason: it filters out the flug and gnur from polluted air.) And that isn't all. Here are further reasons why air conditioning aids and assists better health.

(1) *Life Protection*—The heart works almost 10 times as hard in 90° temperatures as it does in 70° temperatures. Heart attacks are the chief cause of death today. Ergo: Many medicos are installing air conditioners in heart-patient hospital rooms.

Moreover, filtering action of a good air conditioner removes more than 90% of pollen, dust hydrocarbons, and other foreign matter from the air we breathe. This aids those who suffer from hay fever, allergies, and asthmatic attacks. Filtered air additionally thwarts colds, pneumonia, tuberculosis, and probably lung cancer.

(2) *Aid to Growth*—Scientists have found that children in cool states of the U. S. average a full inch taller than those reared in warmer climates. Children in tropical Manila and the Philippine Islands average 2 inches shorter than Filipino children reared in the northwestern United States (where they grow up in a much cooler temperature zone).

(3) *Better Working Conditions*—Speed and accuracy both suffer when the temperature climbs. A man doing heavy factory labor is only half as efficient working at 100° F. temperature as he is when working at a 70° temperature. The same holds true of any housewife going about her daily tasks. With air conditioning, to keep her working atmosphere in the comfort zone, she gets her work done in much less time, and is much more refreshed than her unair conditioned coffee-clatch neighbors.

Similarly, the executive who must bring a stuffed briefcase home from his office, and is privileged to work in an air conditioned room or house, completes that overtime work in considerably less time than his non-air-conditioned competitor does. There's plenty of testimony on this point.

University of Illinois studies reveal that students attending summer school suffer an average mental efficiency drop of 40% during the hot, humid months. An air conditioned study-hall is much more conducive to doing homework well than a torrid fraternity cell.

Furthermore, cumulative and sometimes overwhelming pollution (from factories and autos) in the atmosphere around us can be turned into a most effective air conditioning talking point if good salesmen hammer it home. This crushing dust-load, which is measured in tons-per-cubic-mile, costs the American public more than $2 billion annually while it filters into homes. Not only does it send cleaning and repair bills skyrocketing—*We breathe the awful stuff.*

Scientists, doctors, and civic leaders regard air pollution as one of our most pressing problems. All agree that home air conditioning, whether it is a room unit or a central system, is a positive and important step which each person can take individually to protect himself and his family against lung cancer and pulmonary diseases.

Extensive investigation by a research organization has resulted in the following check-chart of dust particles in the atmosphere of various metropolitan areas. These figures are based on a "fine dust survey" by the Robert Taft Sanitary Engineering Center of the U. S. Public Health Service. They cover a cubic mile area up to approximately 100 ft. above street-level.

Detroit, 153 tons; Charleston, W. Va., 128 tons; Chicago, 124 tons; Los Angeles, 118 tons; New York City, 108 tons; Philadelphia, 83 tons; Cincinnati, 78 tons; Kansas City, 65 tons; Portland, Ore., 64 tons; Atlanta, 61 tons; Washington, D. C., 58 tons; Houston, 57 tons; Minneapolis, 53 tons; Fort Worth, Texas, 49 tons; San Francisco, 46 tons; and Salt Lake City, 24 tons.

"This information," avers an industry spokesman, "gives dealers a special talking point in selling and upgrading their room air conditioner prospects." He quotes Dr. Sam A. Sanders of Memphis, who told the American College of Allergy: "Many people who think they have a cold in winter time actually are suffering from an allergy to house dust . . . the solution is to avoid the offensive dust or decrease it in the environment."

Information of this sort nails down the need for air conditioning in cold weather as well as in summer. Presenting the basic health approach still is a new story to many unsold customers. Nevertheless, it is a story which emphasizes top-grade products and long-term customer benefits—rather than cheap John cut-prices.

Everybody is interested in living longer.

Do you want to get lung cancer, sir? If not, invest in air conditioning!

If a woman wears gay colors, rouge, and a startling hat, a man hesitates to take her out. If she wears a little turban and a tailor made suit he takes her out and stares all evening at a woman in gay colors, rouge, and a startling hat.

The only woman a short haircut could improve would be Lady Godiva.

Sandy McTavish's new girl was so lovely he could hardly keep his eyes on the taxi meter when he took her home.

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Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING, HEATING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

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'The Conscience of the Industry'

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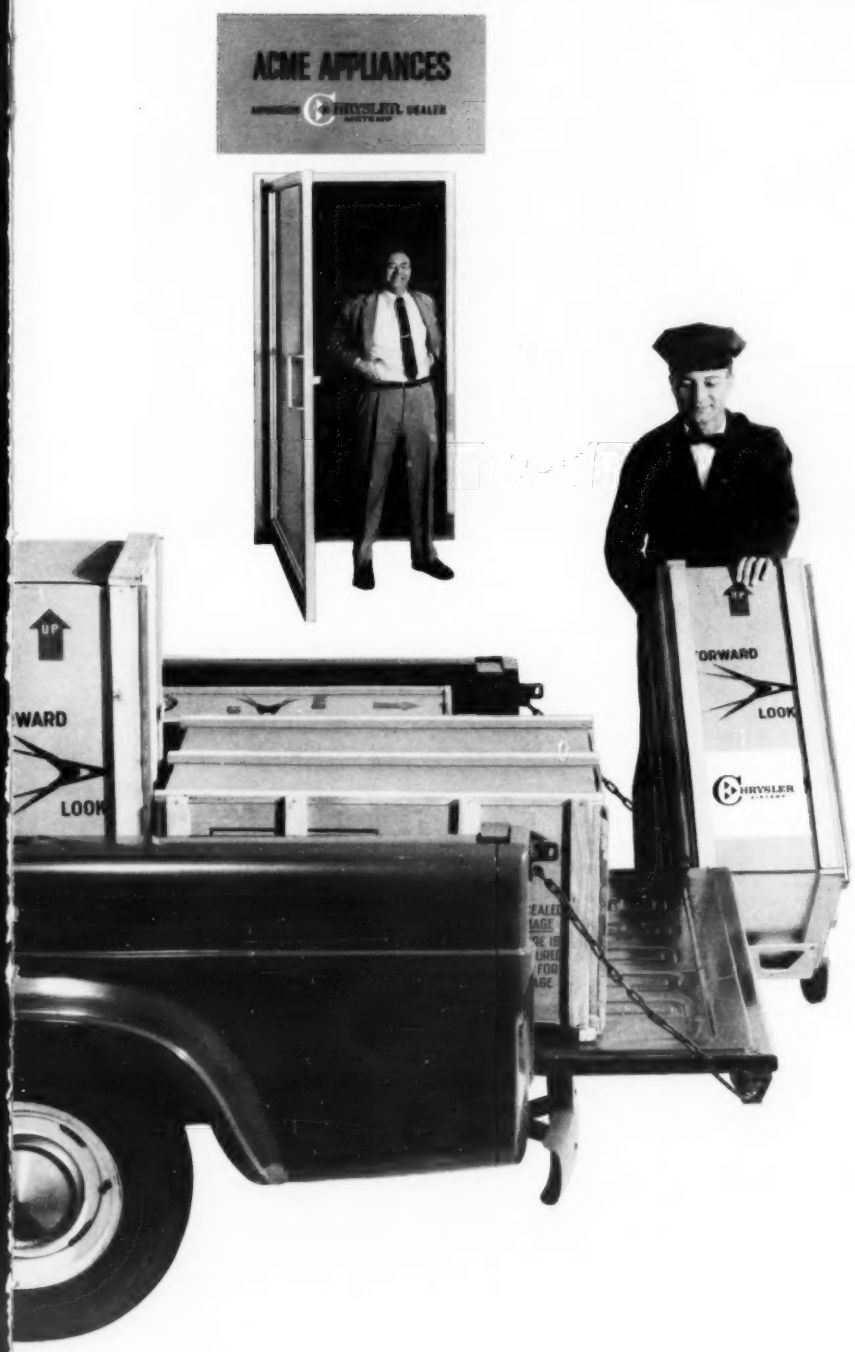
"The mass of people must be barbarous where there is no printing, and consequently knowledge is not generally diffused. Knowledge is diffused among our people by the newspapers."—*Sam Johnson, Boswell's Life,* March 31, 1772.

CHRYSLER
AIRTEMP



means business... BIG business for you in 1959!

New high-styled, high-powered line
. . . including the first room air conditioners that THINK!

New fabulous incentive plan
. . . including free trips to Europe for dealers and distributors!

New full-color national advertising
. . . plus special promotion packages and co-op advertising!

New competitive prices
. . . leading the way to greater sales and better profits.

Here's the full story . . . . . .

THE CHRYSLER SLENDER. All new—inside and out. Fits any conventional window without unsightly overhang. Delivers up to 10,000 B.T.U.H. Climate-Minder standard on Royal model (230 V.).

THE CHRYSLER HIGH POWER. More than twice the capacity of the largest thin unit . . . up to 21,000 B.T.U.H. Yet the High Power actually takes less window space. Climate-Minder on Royal models (230 V.).

Chrysler Airtemp Announces...

FIRST ROOM AIR CONDITIONERS THAT THINK!

Exclusive "Climate-Minder" automatically, constantly brings temperature *and* humidity into perfect balance.

THEY'RE A SALESMAN'S DREAM . . . the first *fully automatic* room air conditioners. Ordinary air conditioners stop running when the desired temperature is reached—often leaving the room fairly dripping with moisture on hot, muggy days. But Chrysler Airtemp units with the Climate-Minder* *continue* to operate . . . wringing out the clammy moisture until both temperature and humidity have been reduced to ideal comfort conditions! Your customers will love them . . . and so will your bank book.

The Room Air Conditioner that Thinks is the biggest sales-building idea in room cooling since the electric fan. But it's just one of the many advantages Chrysler offers dealers in 1959:

* *Most Versatile Line.* With five different series, there's a model and capacity to fit any home or office requirement.

* *Forward Look Styling.* New colors, new grilles, new controls created by Chrysler master stylists to harmonize with any decor.

* *Fast, Easy Installation.* You or your customers can install them with ease . . . in minutes. And, all units are factory-tested for trouble-free operation.

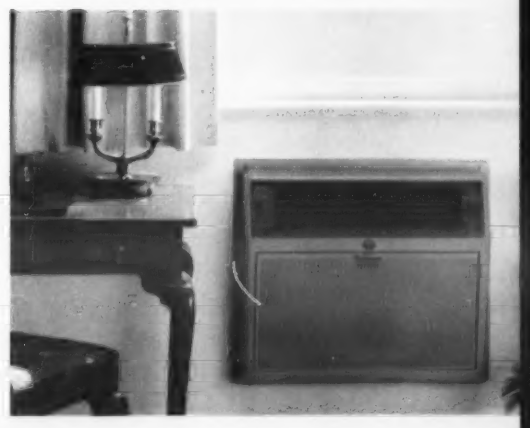
And there's more: new national and cooperative advertising programs, new incentive plan, new competitive prices. Read all about them on the next page. You'll see why Chrysler Airtemp means business—BIG business—in 1959. And you can profit from it.

Contact your local Chrysler Airtemp Distributor. Or write: Airtemp Division, Chrysler Corporation, Dept. P-29, Dayton 1, Ohio. There's no better time to do it than today!

CHRYSLER AIRTEMP

THE CHRYSLER CASEMENT. Installs in minutes without modifying the casement window. No outside overhang . . . and window opens or closes normally.

THE CHRYSLER BUILT-IN. Provides the custom look at an economy price. Specifically designed for easy, slip-in installation. Delivers up to 10,000 B.T.U.H. Climate-Minder on Royal model (230 V.).



THE CHRYSLER IMPERIAL BUILT-IN. For low, in-the-wall mounting. Ideal for homes and apartments where building codes prohibit outside overhang.

**On all Chrysler Slender, Built-In, and High Power 230-V. Royal models.*

Now here's why you'll sell more, and make more, in 1959 with Chrysler Airtemp room air conditioners . . .

Chrysler

is pointing the way

to profit with

this all new

4-point program

1. NEW NATIONAL ADVERTISING!

In color . . . in the Saturday Evening Post. Sells 20,621,000 prospects the powerful story of the first room air conditioners that THINK!

2. NEW CO-OP ADVERTISING!

New Chrysler Airtemp Co-op plan stretches your local advertising dollars to increase your strong selling effort. Includes newspapers, radio and TV time, telephone directory, direct mail, literature.

3. NEW INCENTIVE PROGRAM!

Fabulous, all-inclusive Chrysler Airtemp Incentive Plan for Distributors and Dealers provides an opportunity to realize additional rewards for volume selling. Exciting "Passport to Profits" Program includes lavish, expense-paid trips to Paris and Rome.

4. NEW LOWER PRICES!

Averaging 15% less than last year. They'll give Chrysler Airtemp Dealers the best opportunity ever to cash in on a $480,000,000 market!

To make 1959 the best year yet for Franchised Airtemp Dealers

This is what Chrysler is doing to make room air conditioning pay off for you this summer. Every sign points to the fact that 1959 will be the biggest year in the industry's history. Get ready for it now . . . contact your local Airtemp Distributor today!

CHRYSLER
AIRTEMP

FIRST WITH THE FINEST IN AIR CONDITIONING

Form No. LL 310

LITHO IN U.S.A.

Frozen Food Code To Be Previewed at NAFFP Convention In Chicago Mar. 1-5

WASHINGTON, D. C. — An exclusive preview of the forthcoming AFDOUS frozen food code and its temperature performance standards for merchandising, transportation, storage, and packing practices will be presented to the delegates attending the National Association of Frozen Food Packers' 18th annual convention at the Conrad Hilton hotel in Chicago March 1-5.

The code will affect the business operations of everyone associated with the frozen food industry, the NAFFP said. Portions of the code are expected to be enacted this year as law or as basis of administrative interpretation by state food, drug, and public health officials throughout the nation, the association added.

"Association of Food and Drug Officials of the U. S. (AFDOUS) undertook development of the code in the public interest to maintain frozen food quality," it was explained. "When widely varying regulations were being considered by several states, AFDOUS requested cooperation of NAFFP in developing a uniform and enforceable code based on good commercial practice.

"These code requirements were developed from extensive national surveys and numerous fact finding conferences conducted by AFDOUS and NAFFP.

"Industry leaders are hailing the coming code as the greatest single boon in breaking the mishandling bottleneck currently hampering this $2.3 billion industry. Retailers, distributors, wholesale grocers, truckers, railroaders, warehousemen, and packers attending these important sessions will be in the strategic position of being able to design their present and future business operations to capitalize on market consumption following official adoption of the code."

Halla Heads New Marketing Services Section at York

YORK, Pa.—Establishment of a Marketing Services Section by the York Div. of Borg-Warner Corp. has been announced by Austin Rising, vice president and director of marketing.

Named to head the new section is Robert A. Halla, manager of products and applications for York since 1954.

Rising said the section will consolidate the preparation and production of technical manuals and publications relating to all packaged products, engineered machinery products, and contract products within one group.

The section will be able to provide product and product application information with a minimum of delay and duplication, it was stated.

Virginia Groups Schedule Sessions on Home Cooling for Feb. 20-21 Meeting

WILLIAMSBURG, Va. — Sessions on residential air conditioning and a panel discussion between wholesalers and manufacturers are scheduled for the combined annual meetings of the Virginia State RSES association and Region 3 of Air Conditioning & Refrigeration Wholesalers to be held Feb. 20 and 21 at the Colonial Williamsburg hotel here.

The RSES residential discussion will include talks on air conditioning existing homes by means of chilled water, conversion of warm air systems, and installation of self-contained attic units.

A state championship soldering contest will also be sponsored by Mueller Brass Co.

In the wholesalers' panel discussion manufacturers will be represented by Cecil Boling, president, Dunham-Bush Co.; E. M. Billings, Ansul Chemical Co.; and Tom Phillips. Wholesaler panelists will be William Andrews, August C. Huber, and Paul D. Bodwell with George J. Roche as moderator.

Featured speaker at Saturday's general luncheon will be Alfred P. Dodge, executive vice president of Goldberg-Tiller Corp., Richmond distributing firm.

The conventions will get under way with a buffet Friday evening and will close Saturday night with a cocktail party and dinner-dance followed by a midnight buffet sponsored by Virginia wholesalers, it was announced.

Coggin Promoted To Detroit Controls Vice Presidency

DETROIT—Promotion of F. G. (Ted) Coggin to vice president of the Detroit Controls Div. of American Radiator & Standard Sanitary Corp., has been announced by F. J. Kreissl, division president.

F. G. Coggin

Kreissl also announced that William A. Miller has joined Detroit Controls as manager of marketing administration.

Coggin has been general manager of sales and marketing.

According to Kreissl, Coggin will handle both line and staff responsibilities in his new post. He will render administrative assistance to the president and execute special assignments.

Coggin has been with the parent company since 1926, when it was American Radiator Co. He went with Detroit Lubricator (now Detroit Controls Div.) in 1929.

Miller, for the past two years, has been employed by the Battelle Memorial Institute and assigned to a field team in Beirut, Lebanon. The team organized and directed an industrial research group which is now operating to increase productivity and improve management procedures throughout the Middle East.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

*ONE MILE OF STRIPLINE (slot type) DIFFUSERS

Architects — Perkins & Will, Chicago, Ill.
Air Conditioning & Ventilating Contractors — The Robert Irsay Co., Skokie, Ill.

Installed in Administrative and Research Center

INTERNATIONAL MINERALS & CHICAL CORPORATION

Skokie, Illinois

STRIPLINE . . . Versatile, Inconspicuous, Practical

all photos by Hedrich-Blessing, Chicago

Stripline slot type diffusers guarantee the greatest possible uniformity of air flow while enhancing the modern architectural design.

Regardless of length of the Stripline diffusers installed, these slot type units provide unvaried distribution of noiseless, draftless, conditioned air. Cold or hot spots are completely eliminated.

Stripline is versatile . . . inconspicuous . . . practical . . . , can be located anywhere to suit the interior design . . . in walls . . . ceilings . . . coves . . . moulds . . . window stools.

For complete engineering data ask for Stripline catalog.

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Heating & Cooling with Water

Results of Research over Past 18 Years Summarized In U. of Illinois Report

A cooperative research program in steam and water heating and summer cooling has been carried on at the University of Illinois since 1940. This program has been carried out under the terms of a cooperative contract between the Institute of Boiler & Radiator Manufacturers and the University of Illinois Engineering Experiment Station.

A summary outline of some of the results of the research has been compiled by W. S. Harris, M. D. Eide, and R. D. Barkman of the University of Illinois. Since this concise and informative material may prove useful to those involved in installations of this type of equipment, the summary is being published in a series of instalments in the NEWS. This is Part 4. Parts one, two, and three appeared in the Oct. 6, Oct. 27, and Dec. 1 issues, respectively.

(4) Panel Heating

1. Object: To determine the heat flow characteristics of four different floor panels with and without coverings. The test rooms were insulated as follows:

Room A: 1 in. rigid waterproof insulation under entire floor.

Room B: 1 in. rigid waterproof insulation vertically from floor level down 18 in.

Rooms C and D: 1 in. rigid waterproof insulation L-shaped —long side 24 in., short side 4 in.

Windows: Rooms A and B—one each, window area = 10% floor area. Rooms C and D—two each, window area = 20% floor area. A, B, and C faced North only; D faced one North and one East.

2. Results.

(Bare Concrete Panel)

a. The air temperatures at the center of the rooms were very uniform, with a variation between the floor and 60-in. level of 0.5°. The temperatures of the air 3 in. below the ceiling and 3 in. above the floor were practically the same.

b. The measured heat flow from panel to room ranged from 87% of the calculated above floor heat loss in Room A to 101% of the calculated above floor loss in Room C.

c. It was found that the fuel savings resulting from the use of insulation under the entire floor slab as compared to the use of edge insulation only was too small to warrant the cost.

d. Vertical insulation along the inside edge of the foundation wall was as effective as the L-type edge insulation. The savings in material and the ease of installation make the vertical insulation the more desirable.

e. At design conditions, the reverse loss from panels with edge insulation amounted to 20 to 23% of the total panel output. The reverse loss was roughly twice as great as the estimated heat loss through unheated floor slabs using the heat transmission values given in the ASHAE *Guide,* 1953.

f. Comparison of the reverse loss from the heated slabs with figures presented in Chapter 12 of the *Guide,* 1953, for heat losses from unheated floor slabs, indicates that at an indoor-outdoor temperature difference of 80° F. the fuel consumption when using floor panels would exceed the fuel consumption when using radiators or convectors by about 10%.

g. It was found that while the mean floor surface temperature was uniform across the panel the heat emission rate was much higher near the exposed wall and window than at the center of the room. Thus, the floor panel system had the desirable characteristic of automatically increasing the heat output rate in the areas adjacent to points of high heat loss from the room. For a given floor surface temperature and room-air temperature, one could expect a somewhat higher output per square foot of panel area in an uninsulated room or one with large glass area than in a fully insulated room with limited glass area.

h. At design conditions the measured heat transfer from the panel to Room A was 1.5% less than the calculated output obtained by substituting actual measured air, panel surface, and average unheated surface temperatures in equations 3 and 5 in Chapter 24, the *Guide,* 1953.

Delavan Names Hopkins

DES MOINES, Iowa—W. E. Safris, president, Delavan Mfg. Co., announced the appointment of J. David Hopkins as general sales manager.

Prior to joining Delavan, Hopkins was regional sales manager of the south central region for General Electric Co. in the Distribution Assemblies Div.

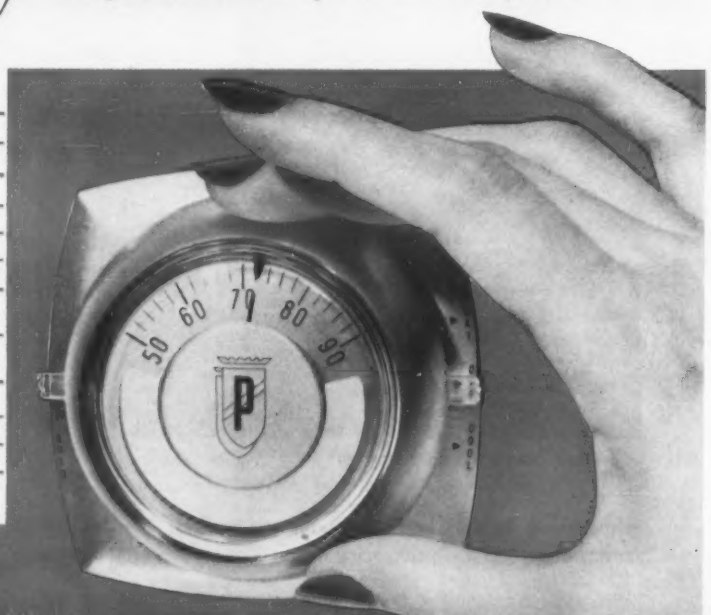
PENN "RIMSET"
handles 12 different heating and cooling jobs.

Why carry a large inventory of room thermostats when ONE unit . . . the Penn "RIMSET" . . . will control *any* heating-cooling function desired? You just stock variables of the subbase . . . the same thermostat simply plugs onto any one of these subbases!

And, here's another extra . . . the Penn "RIMSET" is today's easiest-to-set, easiest-to-read thermostat. When setting temperature, simply **dial the rim** . . . the extra large dial face **remains stationary!** Once you use this better thermostat, you'll want it on all of your heating and cooling installations.

Try Penn on your next job!

APPLICATION	FAN SELECTOR SWITCH	SYSTEM SELECTOR SWITCH
HEATING ONLY	—	—
	—	AUTO-OFF
COOLING ONLY	—	—
	—	AUTO-OFF
	AUTO-ON	AUTO-OFF
	AUTO-ON	—
COOLING — with system interlock for separate heating thermostat	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL
COMBINATION Heating-Cooling	—	HEAT-COOL
	AUTO-ON	HEAT-COOL
	—	HEAT-OFF-COOL
	AUTO-ON	HEAT-OFF-COOL



just dial the rim . . .
easiest to set . . . easiest to read

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

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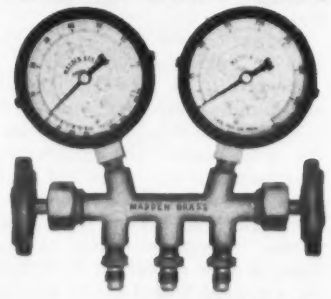
. . . FOR EASIER FASTER SERVICING



Pat. Pending

Designed for convenient charging, purging, testing etc., this new compact unit features an all brass forged body, easy-grip hand wheels, Teflon packing and seat for positive shut-off. Equipped with dual scale 2½-inch pressure and compound gauges. Hose connections ¼-inch male flare, gauge connections ⅛-inch female pipe thread.

HANDY HOSE HOLDER

Attaches to back of testing unit so free end of hoses can be conveniently coupled when not in use. Keeps them dry and free from dirt.

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MADDEN BRASS PRODUCTS COMPANY
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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Plastic Terminology, Application (1)

While the non-expert cannot be expected to know the complex chemistry and technology of the plastics industry, the invasion of most industries by plastic materials makes it mandatory that interested persons have at least a nodding acquaintance with plastic terminology and application.

It is the purpose of this group of articles to present that nodding acquaintance.

In preparing this material, the NEWS has been helped greatly by the cooperation and active participation of Julian O. Schultz, manager, Garzel Plastic Industries, Inc., Detroit, fabricators of Fiberglas laminated materials and custom formulators of polyester, epoxy, and phenolic resins.

The industry has been invaded by plastics.

Rollers and gears, valve seals and seats, electrical insulation, piping, hardware, sealing compounds, thermal insulation are used which quickly come to mind.

Acrylics, polyesters, epoxies, phenolics, vinyls are a few of the names being tossed about. Who's on first?

While it is unnecessary and impossible for heating-cooling people to be fully familiar with the chemistry of these man-made materials, it is important to be familiar with their names and typical applications.

Suppliers Have Failed To Inform Industry

Prime suppliers of plastic materials, who could do most to familiarize industry with their products, their engineering properties, and applications have thus far failed to realize the need for disseminating the information to the specific segments of industry. An article or ad in "Fortune" will not activate company presidents to order their engineering departments to investigate plastics.

At a recent technical society meeting, where the application of plastics had been advertised as a subject to be covered, not one representative of a plastic supplier was available to take advantage of this captive audience and to answer the many questions raised.

Right off, however, recognize that plastic terminology is not especially difficult to acquire. The name **polyethylene,** for example, has been so effectively promoted to consumers that youngsters and housewives refer to their toys and utensils by that name.

Acrylic has less syllables than aluminum; **phenolics** is easier to say than evaporator. Reluctance to use plastic terms is chiefly a state of mind, one fairly easily corrected.

An example: In a new product release, a manufacturer describes "the solid **plastic** front panel located at the right end of the door has an **aluminum** release handle." (Why not plastic panel and **metal** release handle?)

Much more effective is a G-E description of their motors which says in part "'Mylar' **polyester** film protects—" and—"entire stator and shell assembly is dipped in **epoxy-polyester** protective varnish, then baked."

Merely mentioning the material class name in place of or in addition to the vague word plastic will in a short time familiarize the interested with common plastic names and typical applications. Instead of saying "plastic pipe," say "polyethylene pipe," or "nylon tubing," or "polyvinyl chloride pipe."

The information which follows is not the type which can be read once and understood or memorized. A first reading will make obvious the major classifications of plastic families and their general application. Greatest use will come from using the article which follows as reference material whenever the need arises.

Celluloid Was Pioneer

Probably the first man-made plastic was **celluloid,** the material used first in billiard balls then in dental plates, collars, combs, brush handles, and the like. Chemically, this material is a nitrate of cellulose. In one form, this cellulose nitrate or nitrocellulose serves as the explosive guncotton. Because of its flammability and other inferior qualities, cellulose nitrate is not used extensively in industry.

Cellulose acetate does not discolor with age as does nitrocellulose; it does not burn as readily; and it can be supplied in many colors. Since it is a good electrical insulator, cellulose acetate finds extensive use in housings for small-motored electrical appliances and as electrical insulation.

Great quantities of cellulose acetate are consumed in manufacturing of clear films, such as windowed envelopes and paneling.

Cellulose acetate butyrate, like the acetate, is easily worked and fabricated with the tools normally used for wood or metal. Extruded pipe from this material is finding use in irrigation, salt water disposal, gas service lines, and as electrical conduit for telephone power cables. The film is used as primary insulation on solid and stranded wire and cable.

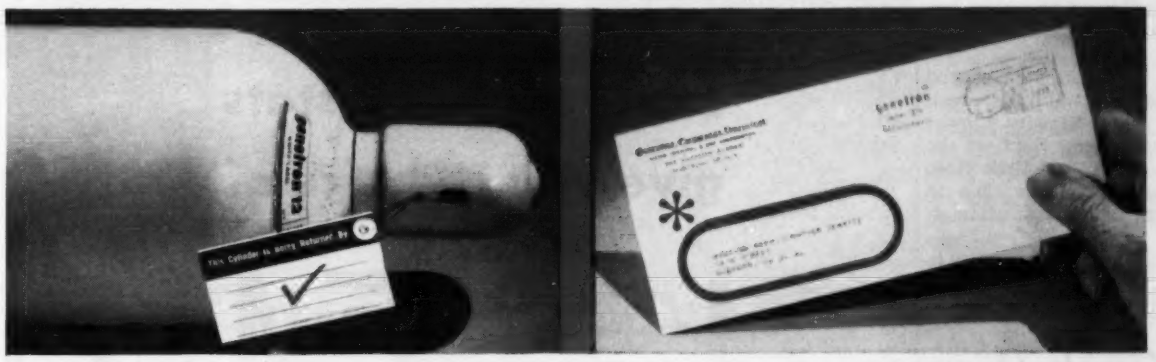
Cellulose acetate butyrate handles and fixtures are used on automobiles because of the materials ability to withstand gasoline and oils.

The radio which Vaughn Monroe drops from several feet to illustrate the case's indestructability (there's no mention of what happens to the tubes!) is very likely made from cellulose propionate, a cousin of the butyrate family, and the most rugged of the cellulosics. Automotive parts, pens, pencils, telephone, television parts are also made from this material.

These cellulosics and others are made by treating cellulose with appropriate chemicals. Cellulose, itself, is a rather inert chemical, a carbohydrate, which makes up the solid structure of plants.

(The term **cellulosics** is applied also to insulating materials made of paper or cotton, but its meaning is usually clear in context.)

(To Be Continued)



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Bridgeport, Conn.	Bridgeport, Conn.
Chicago, Ill. / Danville, Ill.	Chicago, Ill.
River Rouge, Mich.	River Rouge, Mich.
Minneapolis, Minn.	Minneapolis, Minn.
E. St. Louis, Ill.	St. Louis, Mo.
Albany, N. Y.	Albany, N. Y.
Buffalo, N. Y.	Buffalo, N. Y.
Laurel Hill, Maspeth, N. Y. / Passaic, N. J.	New York, N. Y.
Charlotte, N. C. / East Point, Ga. / Jacksonville, Fla.	Charlotte, N. C.
Cleveland, Ohio	Cleveland, Ohio
Baltimore, Md. / Camden, N. J.	Philadelphia, Pa.
Pittsburgh, Pa.	Pittsburgh, Pa.
Providence, R. I.	Providence, R. I.
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Vancouver, Wash.	Seattle, Wash.
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P. H. SCHOEPFLIN

M. H. OLSTAD

Schoepflin, Olstad Promoted by Niagara Blower

NEW YORK CITY—Niagara Blower Co. has announced that Paul H. Schoepflin has been elected to the newly-created position of chairman of the board of directors.

As chairman he will remain active in the business as its chief administrative officer. He was a founder of the company and has been its president since 1919.

Martin H. Olstad was elected to succeed Schoepflin as president. He joined Niagara Blower in the Engineering Dept. at the factory in Buffalo in 1929, later moving to New York City to take charge of application engineering.

He became chief engineer in 1945 and vice president in 1955, according to the announcement.

FTC Cracks Down On Firms for 'Phony Pricing'

WASHINGTON, D. C. — More than 60 business concerns recently have "learned the hard way" that the Federal Trade Commission meant exactly what it said last October in warning merchants to stop advertising fictitiously high former prices in order to make regular prices appear to be bargains, the agency announced.

The warning, in the form of a widely publicized nine-point guide to its own staff, made clear what kinds of price reduction claims the commission considers unlawful.

This guide had the effect of putting merchants on notice that the commission was determined to halt phony pricing by: (1) alerting the public to pricing trickery, (2) inviting sellers to clean up their advertising voluntarily, and (3) cracking down on those who ignore the invitation.

FTC Chairman John W. Gwynne said the commission "is immensely gratified and not a little surprised at how effectively business has responded to our appeal for self-policing in tackling the fictitious pricing evil."

The commission's action in support of its drive (announced last Oct. 2) included 33 complaints, 21 orders, six stipulated agreements to cease and desist, and two initial decisions holding that companies had engaged in the practice.

While 32 of the actions were directed against fictitious pricing of furs, the remainder covered a wide variety of products, according to the FTC.

N. Y. Association of Consulting Engineers Urges City To Adopt 'Same Fee Formula as Prevails In Regular Practice'

NEW YORK CITY—At the 34th annual meeting of the New York Association of Consulting Engineers, a resolution was passed urging the city to adopt the same fee formula for its construction as prevails in regular engineering practice.

This followed the fees committee's report of efforts throughout the year "to improve engineering fees for projects of the City of New York, in particular public schools," and that "progress has been slow and disappointing."

The resolution stated, "An adequate fee for engineering services should be based on an amount equal to two and one-half times the net time card costs of the design staff engaged on the work. This formula is a well established one, is widely used in our private practice, and has found a fairly general acceptance."

In arriving at the recommendation, the committee said it "had obtained actual data from members as to drafting costs on both structural and mechanical projects for all types of public buildings." The data showed actual fees received and compared them with an adequate fee, based on 2½ times drafting costs.

"Results for schools showed a rather remarkable uniformity. The figures for public works jobs presented no particular pattern, but proved quite clearly that public works fees are hopelessly inadequate."

The committee also reported it had conferred with the national associations of architects, civil engineers, and others, and found that the fee schedules of those groups ranged from a multiplier of two and two-tenths for very large jobs to three for smaller jobs.

A letter stating these facts was sent to James D. Carroll, chief engineer of the city's Bureau of the Budget.

The NYACE says that it represents the leading mechanical, electrical, and structural engineers in New York City and that its members are largely responsible for the engineering design that goes into the major building construction in the city.

John F. Hennessy, Jr., vice president of Syska & Hennessy, mechanical and electrical engineering firm, was elected president of the association at the meeting.

Elected vice presidents were Richard T. Baum of Jaros, Baum & Bolles, and Sigmund Roos, head of his own firm. Joseph L. Fraioli of Fraioli-Blum-Yesselman, was elected treasurer and Samuel A. Bogen, head of his own company, was re-elected secretary.

Cambridge Filter Names Wendel Sales Manager

SYRACUSE, N. Y. — Cambridge Filter Corp. announced the appointment of Donald E. Wendel as sales manager.

Wendel has been active in various sales capacities for some time. Cambridge manufactures and sells the "Absolute" and "Aerosolve" filters, used in air conditioning and ventilating systems.

These 2 thermostats give you a choice of

54 Control

Handsome, versatile Honeywell T87 and T870 thermostats let you meet the needs of any air conditioning system

NOW YOU can standardize on Honeywell and let *one* company be responsible for *all* your air conditioning control needs.

Honeywell offers you: Thermostat and sub-base matched for the job; semi-automatic or automatic changeover; heating and cooling—single- or two-stage.

And when you deal with Honeywell, you take advantage of the best field service in the industry, backed by 112 local Honeywell offices located in every part of the country.

For full details on Honeywell's complete line of Residential Air Conditioning Controls, call your local Honeywell office, or write: Minneapolis-Honeywell, Dept. AN-2-26, Minneapolis 8, Minnesota.

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H HONEYWELL First in Control

'American Standard B53.1-1958' Defines Refrigeration, Air Conditioning Terms

NEW YORK CITY — American Standard B53.1-1958—"Refrigeration Terms and Definitions"—has been approved by the American Standards Association and published by the American Society of Refrigerating Engineers.

The standard provides authoritative definitions of words and terms employed in all phases of activity which are connected with refrigeration and air conditioning, according to the ASA.

"In particular it is hoped that the standard will (1) bring about a more logical and consistent use of refrigeration terminology, (2) serve as an authority on word meaning in specification and allied writing, (3) compare meanings of closely related words, (4) be a vocabulary source for technical writing, and (5) provide a classification system which may be useful in other aspects of refrigeration work," the announcement pointed out.

The standard contains an index to classifications, an alphabetical index, and a classified list of words and definitions.

Sponsored by the ASRE, the standard was developed under the auspices of the ASA by Sectional Committee B53. The following organizations were also represented on the committee:

Air Conditioning & Refrigeration Institute, American Society of Heating & Air-Conditioning Engineers, American Society of Mechanical Engineers, Association of Casualty & Surety Companies, Insulation Group, Manufacturing Chemists' Association, National Association of Ice Industries, National Association of Practical Refrigerating Engineers, National Association of Refrigerated Warehouses, National Bureau of Standards, National Electrical Manufacturers Association, Refrigeration & Air Conditioning Contractors Association, Refrigeration Equipment Wholesalers Association, The Refrigeration Research Foundation, Refrigeration Service Engineers Society, U.S. Department of Commerce Bureau of Census.

American Standard B53.1-1958 is available at $1.25 per copy from the American Standards Association, Dept. PR43, 70 East 45th St., New York City 17, or from the American Society of Refrigerating Engineers, 234 Fifth Ave., New York City 1.

James P. Underwood Dies

DALLAS — James P. Underwood, 44, owner of Underwood Heating & Air Conditioning Co. in Oak Cliff, died recently in a Dallas hospital after a brief illness.

He is survived by his wife and two children.

Battelle Research Will Be Directed at Thermoelectric Cooling Techniques

COLUMBUS, Ohio—Research to broaden science's knowledge of materials and techniques required for thermoelectric-cooling devices has just been started at Battelle Memorial Institute here.

Initially, the two-year program is being sponsored by 16 American industrial firms interested in research basic to the use of the so-called Peltier cooling effect for refrigeration.

"There have been predictions recently that refrigeration and air conditioning may soon be accomplished on a large scale by electronic units without either the moving parts or chemical coolants used in present-day appliances," the institute announcement said. "These predictions are based on the assumption that improved thermoelectric-cooling materials can be developed.

"The Peltier or thermoelectric cooling effect is achieved when electric current causes heat to be absorbed at one junction of two dissimilar materials and released from another junction of the same materials. Devices utilizing the Peltier effect require extremely pure materials having a closely controlled combination of electrical properties.

Basic Objective Cited

"The basic objective of the new research program is the preparation of new compounds and investigation of their resistivity, thermal conductivity, and thermoelectric power.

"Materials to be studied will be chosen from the following chemical systems: compounds of copper, silver, and gold with sulfur, selenium, and tellurium; compounds of zinc, cadmium, and mercury with arsenic, antimony, and bismuth; and compounds of alkaline-earth metals, such as magnesium and calcium, and of alkali metals, such as sodium and potassium, with germanium, tin, lead, arsenic, antimony, and bismuth. In addition, combinations of these compounds in alloys will also be studied."

Dr. E. H. Lougher, who will coordinate the research at Battelle, pointed out that the study will concentrate on the thermoelectric properties of materials which have thus far received relatively little attention for thermoelectric devices. Materials that have already been investigated extensively, such as bismuth telluride, are not included in the present study.

Industry Supports Research Effort

The Battelle chemist said the new research program is the result of "what was, in effect, a general invitation from Battelle for industry's support of much needed research in this area." He indicated that it is anticipated that additional companies will join in the sponsorship of this research, as the program progresses.

Companies sponsoring research initially include: American Motors Corp.; Carrier Corp.; Chrysler Corp.; Fedders Corp.; General Motors Corp.; Hamilton Standard Div., United Aircraft Corp.; Lockheed Aircraft Corp.; The Martin Co.; Monsanto Chemical Co.; National Carbon Co., Div. of Union Carbide Corp.; Ranco, Inc.; Robertshaw-Fulton Controls Co.; Tecumseh Products Co.; Texas Instruments, Inc.; Westinghouse Electric Corp.; and Whirlpool Corp.

Specialists from both Battelle's Solid State Devices Div. and Physical Chemistry Div. will be called upon to assist in the thermoelectric-cooling research program. They have been engaged in research on thermoelectric materials, including lead telluride and its alloys, for the past eight years. For three years, they have also been conducting research on bismuth telluride and related compounds.

Combinations!

42 CONTROL COMBINATIONS—T870 THERMOSTAT

New deluxe heating-cooling series permits semi-automatic or full-automatic changeover. Six models, seven sub-bases give *up to 42* combinations for every type of heating and cooling—single- or two-stage. Switching for remote reset available. Anticipation on all stages of heating and cooling. Easy installation. Dust-free mercury switches. Handsome styling.

12 CONTROL COMBINATIONS—T87 THERMOSTAT

Standard Residential Air Conditioning thermostat for semi-automatic changeover. 12 matching Q405 sub-bases provide the most flexible control combination available. Features the popular styling, decorator cover, and engineering advantages of the world-famous Honeywell Round. Dust-free mercury switch. Anticipation on both heating and cooling.

YOU HAVE MORE TO SELL WHEN YOU SELL HONEYWELL

Dealer Group Plans 1st Convention Feb. 26-28

PINEHURST, N. C. — First annual convention of the Heating & Air Conditioning Research & Development Association will be held Feb. 26 to 28 at the Mid Pines club here, announces E. A. Fails, executive secretary.

The program will get under way with a board of directors meeting and smoker Thursday evening, Feb. 26. A variety of topics will be covered in Friday's all-day session, which will be followed by a banquet. An association business meeting is scheduled for Saturday morning.

Slated for discussion in Friday's meeting are: "Management Research and Business Operations — What Can and Should We Do," "Credits and Collections," Current Problems Facing Dealers Today," and "Financial Statement Analysis and Use."

Members of the association will pay a $3 registration fee for the convention; non-member dealers, $5. There will be no fee for guests who are not dealers.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

TOLERANCE

Reason why — it Pays to Specify United **Seamless** Copper Tube

And United Aluminum and brass tube, too, for tube tolerance is a vital factor in terms of your manufacturing profit. Specialists in precision small-diameter, thin-wall tube, United draws every tube inch to meet specifications. If exacting diameter, wall thickness, temper, finish and cleanliness are important to you, It Pays to Specify United: Write for information or quotations:

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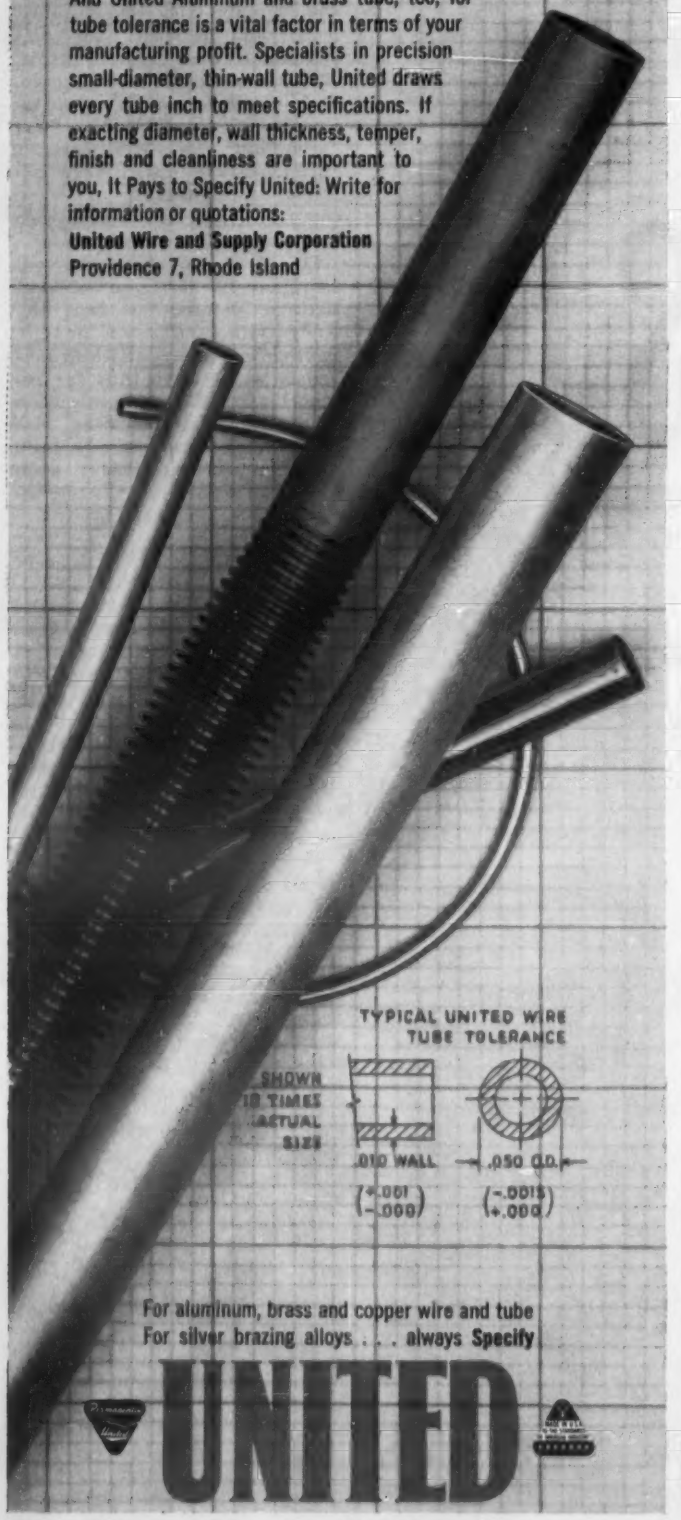


For aluminum, brass and copper wire and tube
For silver brazing alloys . . . always Specify

UNITED

What Was New at Builders Show

CIRCULAR condensing unit and coil in foreground may be used with counterflow gas furnace in background to air condition basementless homes, Gerald Little, project engineer for International Oil Burner Co. (l.), tells J. D. Eckles of Jacksonville, Fla.

REMOTE HEAT PUMP introduced by Frigidaire Div., General Motors Corp. attracts attention of DeLois Boydston of Muskogee, Okla. The coil-blower unit, with matching compressor unit is available in 3 and 5-hp. models.

INDICATING induced draft blower that draws air over burner in Iron Fireman's new Custom Mark II oil furnace for instant clean flame is Jack Jordan, assistant to the president. U-shaped stack demonstrates that draft is no longer a problem with this furnace.

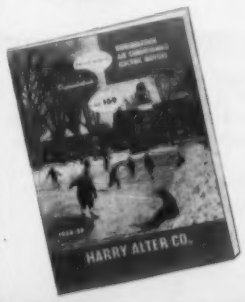
COMPANION cooling section for Williamson Co. high boy gas or oil furnace is presented by C. T. Pfirrman, Williamson advertising manager. Blower and coil can be reversed for upflow or downflow operation.

EASY TO GET AT are the components of the Coleman Co.'s "Polar Prince" 5-hp. condensing unit, Jo Jones, Coleman regional sales manager (l.), shows Noel Essmann of St. Louis.

NEW DEMONSTRATOR for Coolerator's "Lectrofilter" to show how dust particles are attracted to charged grid is studied by E. D. Farrell, regional manager (l.), and William J. Wawrzonek, manufacturer's representative. Farrell holds filter section to show how Lectrofilter is installed.

OVER A HUNDRED EAGER BEAVERS

Yes, and everyone is ready, willing and able to serve you right. For nearly three decades, we have been key suppliers to the trade. 24 of our key people have a total of 504 years experience in this business. Why not take advantage of their very snappy service.



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Also our monthly Flyer of surplus and close-out Bargains.

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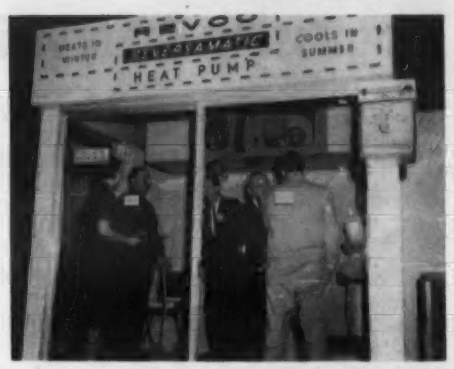
FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

For additional details on these products shown at the National Association of Home Builders conclave in Chicago please write to the manufacturer. Other pictures appeared in the Feb. 2 Issue.

HOLDING NEW Edwards Engineering Co. wood grain baseboard radiation unit and mercury switch motorized control valve for "Zone-A-Matic" heating unit is E. A. Bogucz, Edwards vice president.

DUSTRONIC air cleaner is designed to fit in return air duct of a forced warm air furnace. Made by Radex Corp., it requires no water or sewage connections. Air is drawn through series of aluminum plates alternately charged with D.C. voltage. Magnetic fields thus set up cause dust to adhere to plates.



ENJOYING ALTERNATE heating and cooling provided by new Revco "Reversamatic" heat pump, builders learn that it is available in 32,000 B.t.u., 36,000 B.t.u., and 64,000 B.t.u. sizes.

YORK "COMFORT CENTER" featuring air conditioner, furnace, dehumidifier, humidifier, and electrostatic air filter all in one cabinet wins approval of Judi Lawrence of Northwestern university.

"HUMIDITROL" electric humidifier with water level and rate of evaporation electrically controlled is shown by W. A. McLemore, assistant sales manager of Mueller Climatrol.

JOHN NORRIS (r.), president of Lennox Industries, Inc., listens as H. O. Fox of Johnson Furnace Co., Kansas City, makes a point about the "Landmark" combination heating and air conditioning units Lennox will emphasize more heavily this year.

NOW . . FROM *REMCO* MOLECULAR SIEVE FILTER-DRIERS with DEPTH FILTRATION

Utilizing advanced design Molecular Sieve cartridges, these new Remco Filter-Driers combine unequalled drying efficiency, effective acid removal, generous flow capacity and *depth* filtration.

The massive depth filter completely removes all scale, sludge, carbon and other particles as small as 100 microns. Molecular Sieves adsorb and retain large quantities of moisture even at refrigerant temperatures of 140F, and keep moisture concentrations below 10 ppm. Acids are reduced far below dangerous corrosion limits.

Compact in size, the filter-driers are U/L Approved and may be used for Refrigerants 12 or 22, Carrene or methyl chloride. Working pressure is 500 psi; minimum bursting pressure, 2500 psi.

REPLACEABLE CARTRIDGE TYPE units use an "O" ring for a positive, leakproof flange seal. From 3 to 40 tons, with ⅜" thru 1⅝" sweat connections.

SEALED TYPE filter-driers are available in 1 to 12 tons, with ¼" thru ⅝" flare and ⅜" thru ⅞" sweat connections.

"T" FITTING TYPE in 2 to 6 tons, are readily adaptable to systems using conventional "T" driers.

Remco Molecular Sieve Filter-Driers are available at leading wholesalers. Ask your wholesaler for more information, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

REMCO

MANUFACTURERS OF ADVANCED REFRIGERATION PRODUCTS

Filter-Driers • Liquid Indicators • Receiver-Driers • Check Valves • Safety Devices • Frost-Tite Flare Nuts

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For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

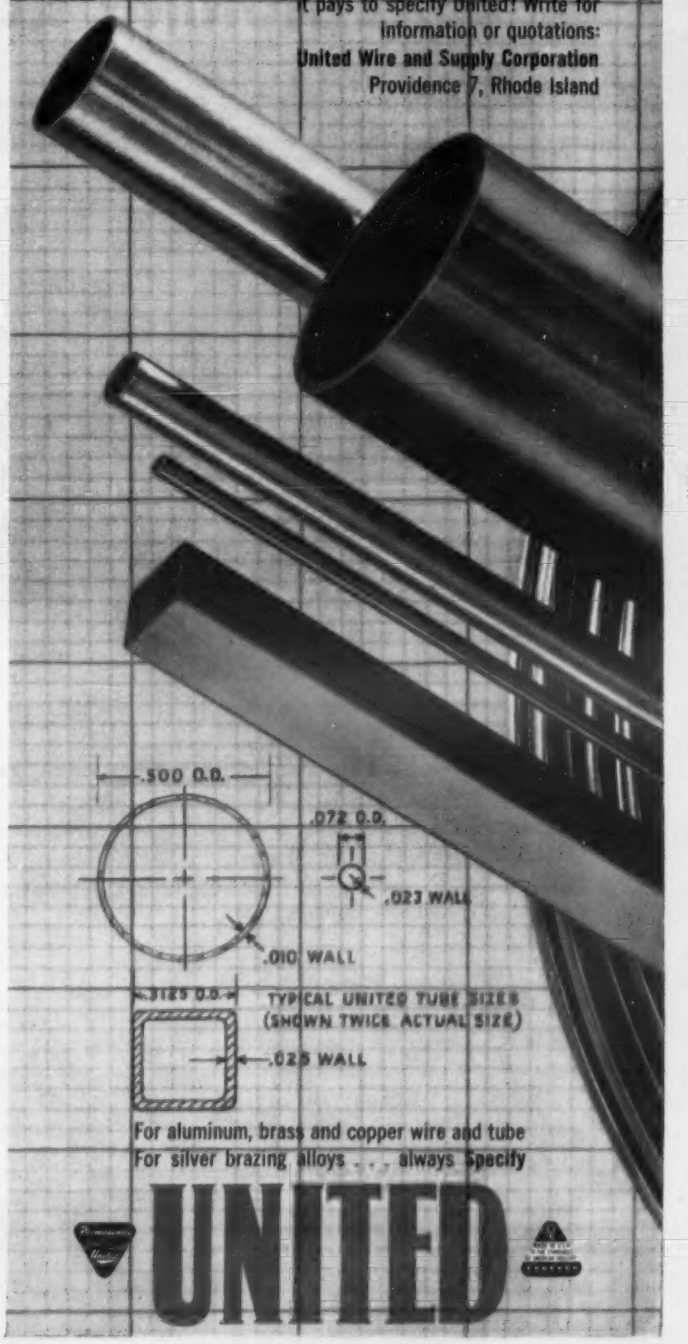
Only 25¢ each.

SIZE

Reason why — it Pays to Specify United **Seamless** Copper Tube

No matter how "exact" your size requirement for copper, aluminum or brass tube . . . specify United. A precision small-diameter, thin-wall tube mill (from finest capillary up to 1½") United delivers tube to exact specifications for size, tolerance, temper, finish and cleanliness. In coils, standard mill lengths, or cut to your specifications, it pays to specify United! Write for information or quotations:

United Wire and Supply Corporation
Providence 7, Rhode Island



For aluminum, brass and copper wire and tube
For silver brazing alloys . . . always Specify

UNITED

Diagnosing & Servicing Hermetic Compressors

(3) Adding Refrigerant and Recharging the System and Removing an Inoperative Motor Compressor Assembly

Warranties of some companies on refrigeration systems are voided by the simple service error of charging the wrong refrigerant into a system—R-22 instead of 12, or vice versa. Other warranties may be voided by the addition to the system of any alcohol or liquid dehydrant.

These are examples of the down-to-earth information presented in this series of articles on the analysis and service of hermetic and semi-hermetic compressors.

Written by Tom Pendergast, vice president, Employers Insurance Service, Inc., with more than 30 years' experience in manufacturing, selling, and servicing refrigeration systems, these articles will cover such basic problems as low voltage, refrigerant restriction, moisture removal, compressor replacement, evacuating, and charging. They supply quick review for the experienced serviceman and a comprehensive introduction to service techniques for the novice.

ADDING REFRIGERANT AND RECHARGING SYSTEM

All hermetic, semi-hermetic, and conventional compressors are designed for either Refrigerant-12 or Refrigerant-22. Be sure to add the type of refrigerant that is required and *only* that type.

Refrigerant-22 cannot be used in a system designed for Refrigerant-12, nor can Refrigerant-12 be used in a system designed for Refrigerant-22. Check the Bill of Material number and the refrigerant on the serial number plate.

The use of any other refrigerant or the interchanging of Refrigerant-12 and Refrigerant-22 in a system will void most warranties.

If it is found necessary to add refrigerant to the system, the following procedure should be followed:

1. Before adding refrigerant to the system, the system should be pressurized to 75-85 p.s.i.g. and all joints checked for leaks with a Halide or electronic leak detector. If the system is short of refrigerant there is a leak which must be found and eliminated.

2. If the charge is removed from the system to repair the leak, it is well to proceed as follows to be sure the system is dry. (See Fig. 3.)

(a) Properly valve the charging line, which must have a compound gauge in it, so that both a refrigerant drum and a vacuum pump can be attached to it with the gauge reading for either of them alternately.

(b) Connect the charging line to the charging valve port on the suction line or the suction charging valve; leave the flare nut loose and purge the line with the valve shut off to the vacuum pump, then tighten the nut.

Open the charging valve and valve on the charging drum and pressurize the system to 75-85 p.s.i.g.

(c) Carefully recheck every connection in the system with a leak detector. Be sure the system is perfectly tight.

(d) Let the test charge out of the system by loosening some nut or connection on the high pressure side of the system down to 0 p.s.i.g. and close the opening.

(e) Open the valve to the vacuum pump, start it, and let it run until a line from its discharge in a glass of oil shows few or no bubbles. Shut off the valve to the vacuum pump, crack the valve on the charging drum and pressurize the system to 2-3 p.s.i.g. (The charging drum should be in an upright position so that gas, not liquid, enters the compressor.)

(f) Reverse the vacuum pump and charging drum valves and evacuate the system again. Doing this two or three times is good insurance against trouble due to moisture and non-condensables.

IMPORTANT

Do not use a hermetic compressor to evacuate a system. You should have a good vacuum pump. A hermetic compressor running on a deep vacuum can cause:

1. Contamination of the compressor.

2. With high voltage a corona or "lightning" effect in a rarified or thin atmosphere causing arcing and shorting which will break down the winding insulation.

3. A very hot motor due to no gas cooling or heat dissipation.

One of the following paragraphs will help charge the system with the correct refrigerant charge.

CAPILLARY TUBE SYSTEMS

If the refrigerant charge of the system is given on the manufacturers nameplate, the refrigerant in the system can be purged out and exact amount specified can be weighed into the system.

The correct charge of refrigerant in a system using a capillary tube type of metering device is determined when the refrigerating effect of the evaporator is at or near the suction line connection to the evaporator, when the evaporator and the air in contact with it are at normal operating temperature.

An undercharge of refrigerant is indicated when the evaporator is not completely refrigerated. This same condition can be due to a low ambient temperature and a low head pressure.

Systems with capillary tubes will not work satisfactorily in places exposed to winter weather. They must be in a heated area.

An overcharge of refrigerant is indicated when the suction line is cold or frosting for more

(Continued on next page)

NEW

ADVANCED DESIGN—

FURNAS ELECTRIC CONTACTORS For AIR CONDITIONING, REFRIGERATION, HEATING

These compact contactors are designed for heavy duty service and can be mounted in any position.

- 20, 30, 40 amp, 2, 3, and 4 pole devices all have interchangeable mounting dimensions.
- Molded coil is moistureproof, available with screw terminals, quick connect terminals or leads.
- Magnet design has "No Kiss Potential" feature—positive pull in and drop out. Low inrush characteristic.
- Contactor is not a "throw-away" device. Coils and contacts can be readily changed in the field.
- UL Listing.
- 550 Volt Ratings.
- Pressure connectors on all poles eliminate necessity of looping and bending wires.
- Auxiliary terminals available on all contactors.
- Normally closed poles available.
- Contacts are visible and easily inspected.
- Lugs available on all 40 amp devices to accommodate up to #6 wire.
- One-piece molded arc box and base construction assures positive alignment.
- Available in Open and Nema 1 enclosed types. Wrap-around cover facilitates ease in wiring.
- Contacts are of premium-grade Silver-Cadmium Oxide material. All contact springs are stainless steel.

CLASS 41
ACTUAL SIZE

Furnas also features a complete line of controls for your particular application. Some of these are:

—20, 30, 35, 50 amp current rated starters for use with hermetic motors.
—Industrial starters through 100 HP.
—Part-winding starters, through 200 HP.
—Reduced voltage primary resistance starters.
—Reduced voltage autotransformer starters.
—Special Control Panels.

CONTACTOR RATINGS

RATINGS	20 AMP		30 AMP		40 AMP	
	240 V	550 V	240 V	550 V	240 V	550 V
FULL LOAD	20	10	30	15	40	20
LOCKED ROTOR	120	60	180	90	200	100

SPECIFICATIONS

CONTACT RATINGS	20, 30, 40 amp continuous duty. Contacts replaceable.
CONTACT TERMINALS	Pressure connections on all models.
COIL TERMINALS	Screw type, quick connect type or leads. Coils can be easily changed.
COIL RATINGS	6 to 550 Volts A.C.
POLE ARRANGEMENT	2 - 3 - 4 pole normally open. (Normally closed available on request.)
ENCLOSURES	Open type and Nema 1.

FURNAS

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

WRITE FOR FREE BULLETIN 41-B1

(Continued from preceding page)

than a few inches beyond the suction line connection at the evaporator.

Systems using a capillary tube have, in many cases, a critical refrigerant charge and the addition or loss of a few ounces of refrigerant will cause an overcharged or undercharged condition. For this reason, the charging of refrigerant should be done very slowly, the best method being to charge in a small amount of refrigerant and then close the charging valve and wait for the system to balance out to see where the cold or frost line ends before continuing.

The final check of the charge must be made with the system under full load. If the evaporator is of the blower type the fan must be running.

EXPANSION VALVE SYSTEMS

The correct charge of refrigerant with an expansion valve type of metering device is determined by a refrigerant "sight glass" installed in the liquid line immediately after the receiver outlet valve. The correct charge is obtained when the "white bubbles" disappear in the sight glass.

It is general practice to add an additional "reserve" charge after the "white bubbles" disappear. The amount of the reserve charge will depend on the type and size of the system. Care should be taken not to overcharge the system to the point where the complete refrigerant charge cannot be pumped into the receiver.

Most compressor motor assemblies supplied by the factories are charged with suitable refrigeration oil. The loss of a few ounces of oil due to a leak or spillage will not affect the unit operation and should not be considered serious.

REPLACING A MOTOR COMPRESSOR ASSEMBLY

If, after making all appropriate tests, the Service Engineer determines that it is necessary to replace the motor compressor assembly, the following procedure should be followed:

Warning: Before replacing the motor compressor assembly or attempting any major repairs to the refrigeration system on OEM equipment, the local dealer of the manufacturer of the complete cabinet or fixture should be consulted.

REMOVAL OF INOPERATIVE MOTOR COMPRESSOR ASSEMBLY

1. Remove electric supply cord from the receptacle and disconnect the control leads and supply cord from the terminals under the relay cover.

2. Remove the sealing plug or cap from the suction line valve on the side of the compressor or the charging valve. Install the charging line on which a compound gauge has been mounted.

3. Open the charging line to the gauge. If the gauge reading shows a pressure above zero pounds, the charging valve may be closed and the charging line removed.

However, if the gauge reading indicates a vacuum, refrigerant must be added to bring the pressure above zero pounds gauge, so that air and moisture will not be admitted when the system is opened. This can be accomplished by closing the charging valve port and connecting to a drum of the proper refrigerant with a compound gauge in the line arranged so that a vapor charge may be added in order to provide sufficient pressure for a thorough leak test of the system.

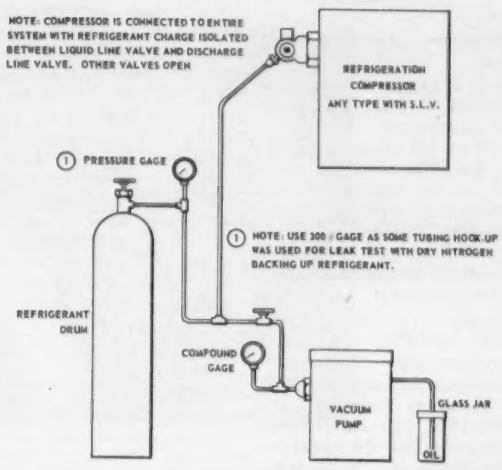
Any leaks that are found should be eliminated before proceeding. The motor compressor suction line valve may then be opened and the refrigerant drum and charging line removed.

4. Before the lines are disconnected, the mounting bolts should be taken out so that the change of compressors can be made quickly.

5. With a low positive refrigerant pressure existing in the system, the suction and discharge lines should be removed from the motor compressor assembly and sealed with appropriate fittings. This operation should be performed as quickly as possible to prevent air or moisture from entering the system. The fittings on the motor compressor should also be capped or sealed to prevent moisture or dirt from entering when it is returned to the factory.

(To Be Continued)

Fig. 3—Triple Evacuation


NOTE: COMPRESSOR IS CONNECTED TO ENTIRE SYSTEM WITH REFRIGERANT CHARGE ISOLATED BETWEEN LIQUID LINE VALVE AND DISCHARGE LINE VALVE. OTHER VALVES OPEN
REFRIGERATION COMPRESSOR ANY TYPE WITH S.L.V.
1 PRESSURE GAGE
1 NOTE: USE 300 # GAGE AS SOME TUBING HOOK-UP WAS USED FOR LEAK TEST WITH DRY NITROGEN BACKING UP REFRIGERANT.
REFRIGERANT DRUM
COMPOUND GAGE
VACUUM PUMP
GLASS JAR
OIL

DOES YOUR APPLIANCE CARRY THIS

Seal of Quality?

★ The motor used in this equipment is protected against overloads, low voltage, over-voltage with a Mighty Mite Thermal Protector ★

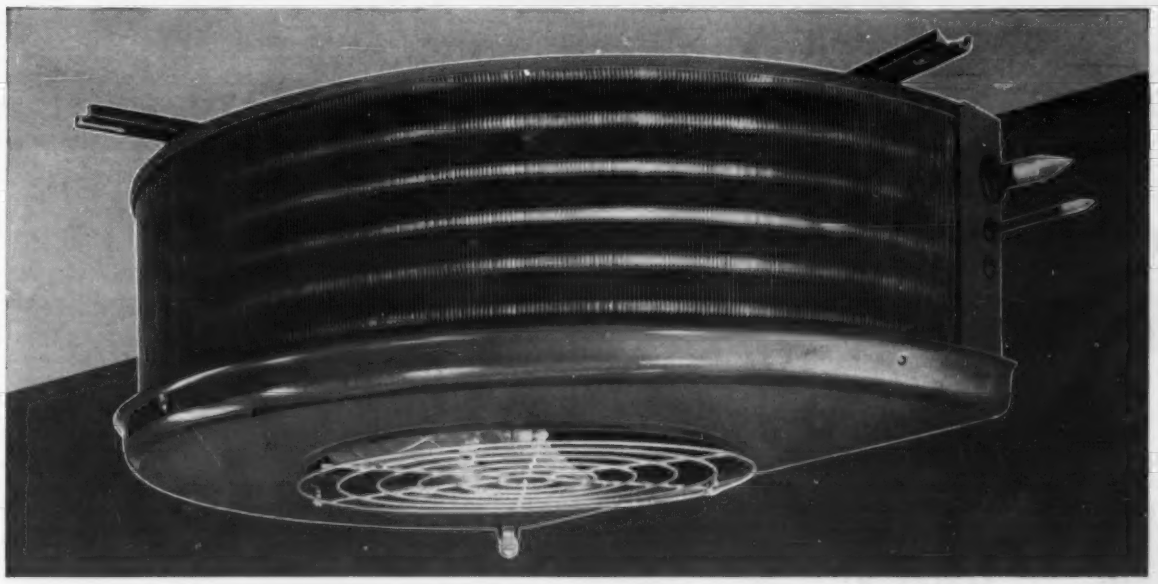
MECHANICAL INDUSTRIES PRODUCTION CO.

223 Ash Street • Akron, Ohio

The Space-Saving

LARKIN Half-Turret Humi-Temp

Balances Temperature and Humidity



Larkin Half-Turret Humi-Temps are quality engineered to control temperature and humidity in applications above 35°F. Units mount flush to cooler wall and ceiling permitting maximum storage space.

Scientifically designed air diffuser assures uniform distribution of air, 100% usage of coil surface, more effective leaving air. Lip on drip pan forces air up and out and prevents cold air from re-entering the evaporator.

It will pay you to investigate the advantages of the Larkin Half-Turret Humi-Temp—another quality refrigeration product with traditionally fine engineering and workmanship.

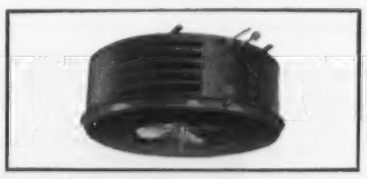
See your wholesaler or write for Bulletin 1049B.

Features That Sell

- Built-in heat exchanger
- Original, patented Larkin Cross-Fin Coil with staggered electro-tinned copper tubing and aluminum fins
- Light-weight, rust-proof aluminum case finished in Larkin Blue or gleaming white
- Permanently lubricated motors, resilient mounted, with thermal overload protection
- Hinged drain pan for easy access to coil
- Airplane-type, vibration-proof fastenings
- Heavy die-stamped mounting brackets, slotted for easy mounting
- Fully insulated drip pan

BASIC RATINGS

Model	Capacity Rating Btu/hr @ 10° TD F	Total Surf. Area	Cfm
HT-25	2500	74	500
HT-35	3500	85	700
HT-45	4500	107	900
HT-54	5400	154	880
HT-68	6800	189	1120
HT-87	8700	228	1400
HT-106	10600	296	1850



LARKIN TURRET HUMI-TEMP ALSO AVAILABLE

WATCHDOG OF THE NATION'S FOOD AND COMFORT © LARKIN

LARKIN COILS INC.

519 MEMORIAL DRIVE, S.E., ATLANTA, GEORGIA

Now Representing...

Fedders Corp. — CERTIFIED SERVICE, INC., Detroit, has been named exclusive wholesale distributor for Fedders air conditioners and dehumidifiers. The firm will serve retailers in 29 counties in eastern Michigan, including the principal trading areas of Detroit, Lansing, Saginaw, Flint, Battle Creek, Ann Arbor, and Jackson.

Drayer-Hanson—A newly-formed organization in New Orleans, McDOUGALL SALES CO., will be exclusive sales agent in Louisiana. The firm's principal, Ben M. McDougall, has been associated with Kennard Corp. as sales manager. RoCo Equipment Co., New Orleans, formerly represented Drayer-Hanson in that area.

American Air Filter Co., Inc.—MACHINERY & EQUIPMENT SALES, INC., Baltimore, has been selected to represent AAF for the marketing in the Baltimore area of its air filter, dust control, and engine and compressor products. These products formerly were represented by Air Filter Associates.

Brewer-Titchener Corp.—ROBERT M. FREDRICKS CORP., Woodside, N. Y., has been named sales representative for BTC dairy and ice cream cabinets in the metropolitan New York area and adjacent territories including northern New Jersey, the Hudson Valley, and Connecticut.

U. S. Flexible Metallic Tubing Co.—CALIFORNIA HYDRONICS CORP. of San Francisco has been appointed manufacturer's agent in the territory of northern California from Kern County to Oregon, and all of Nevada except Clark County (Las Vegas) for its expansion joints, vibration absorbers, and pipe guides.

Carrier Corp.—PEIRCE-PHELPS, INC. has been appointed wholesale distributor of applied heating and air conditioning equipment in the Philadelphia area. This will be in addition to its existing franchise covering room air conditioners, ice making products, and self-contained equipment for residential, commercial, and industrial purposes.

The Garman Co. — RAY G. TRAFTON, Metairie, La., has been appointed sales representative in Louisiana, Arkansas, Mississippi, and western Tennessee. E. M. TOUSSAINT, San Jose, Calif., whose firm covers 10 western states, also has been named sales representative.

Aluminum Refrigerator Door Co., Inc.—Named factory representatives were WM. J. McKEOUGH, Hartford, Conn., for New England states and metropolitan New York; GEORGE J. FRANK CO., Summit, N. J., for Pennsylvania, New Jersey, and New York state; C. G. BAKER, Atlanta, for Florida, Georgia, North and South Carolina, Alabama, Mississippi, and Tennessee; EDDY J. MILLER, Evansville, Ind., for southern Illinois, eastern Missouri, Kentucky, and Indiana; CLYDE L. WEBB CO., Fort Worth, for Texas and Oklahoma; and HUGH SMART, River Forest, Ill., for Illinois, Michigan, Wisconsin, and Iowa.

Ilg Electric Ventilating Co.—R. B. GAGE has been appointed Reading, Pa. sales representative. Prior to joining Ilg, Gage was associated with Powers Regulator Co., Marco Industries, Inc., and Wales-Strippit Corp.

York Corp.—REFRIGERATION SALES CO., INC., Long Island City, N. Y., announced its appointment as authorized wholesale parts depot stocking York replacement parts for engineered machinery, York valves and fittings, and York oil and accessories. Refrigeration Sales will serve the greater New York area including 35 counties in New York, New Jersey, Connecticut, and Massachusetts, and will sell to York franchised associates and accredited industrial users.

Ben-Hur Mfg. Co.—BOGART-DIETZ DISTRIBUTING CO., Toledo, has been named northwestern Ohio distributor.

Carrier Corp.—Two manufacturers' sales representatives have been appointed to market unit heaters and heat diffusers. FONTANESI & KANN CO. of Detroit will sell in the southeastern half of Michigan. NER W. RATHBUN of Grand Rapids will cover the southwestern half of the peninsula and some counties in northern Indiana, including the city of South Bend.

Admiral Corp. — COVINGTON DISTRIBUTING CORP., San Antonio, was appointed distributor in southwest Texas. Admiral products have been distributed out of the Houston branch since Lone Star Wholesalers, Inc., gave up the distributorship several months ago.

Farr Co.—JAMES R. MASON, Charleston, W. Va., has been appointed representative in Allegany and Garrett counties, Maryland, and Clarke and Frederick counties, Virginia. ELDON C. THOMAS CO., Oklahoma City, is another new representative.

Home Products Div., Rheem Mfg. Co.—Appointment of DURO SUPPLY CO., Bay City, Mich., as distributor of furnaces and central air conditioning systems in northeastern Michigan has been announced.

Tork Time Controls, Inc.—ROBERT L. KANTER has been appointed representative in Chicago and northern Illinois, with offices in Hillside, Ill.

Modine Mfg. Co.—Appointed sales representatives were WEBER-RISHEL CO. for the Cincinnati territory, WILLIAMS & STAUP, INC., for the Toledo territory, and MEACHAM PUMP & EQUIPMENT CO. in the Springfield, Mass. territory.

Hynes Electric Heating Div., Turbine Equipment Co.—A. Q. ROBERTS, Dallas, has been appointed representative. He will be responsible for sales and service of resistance heating devices in northeastern Texas.

Pennsalt Chemicals Corp. — MERLE G. HAYNES has been appointed manufacturers' representative for "Isotron" refrigerants in California, Oregon, Washington, Colorado, New Mexico, Montana, Idaho, Wyoming, and Utah. He will have his headquarters in Berkeley, Calif.

Airtemp Div., Chrysler Corp.—SABINE SUPPLY CO. of Dallas has been appointed room air conditioner distributor for northern Texas.

The Trane Co.—Appointment of CONDITIONED AIR, INC., as a distributor of package air conditioning equipment in the greater Houston trading area was announced.

Amana Refrigeration, Inc. — CAPITOL WHOLESALERS, Div. of Consolidated Sales, Inc., Indianapolis, replaces Peaslee Gaulbert Corp. as Amana and "Deepfreeze" distributor in the southern half of Indiana. For North and South Carolina, with the exception of six counties, the distributor for these products will be ALLISON-ERWIN CO., Charlotte, N. C. CAROLINAS' FOOD PLAN DISTRIBUTORS, INC., Charlotte, will continue to supply the two-state area's Amana Plan accounts with Amana freezers and freezers-plus-refrigerators.

Taco Heaters, Inc.—New territory appointments have been announced, covering Minnesota, North and South Dakota, and the western part of Wisconsin. R. M. COTTON CO., Minneapolis, is distributor for commercial and industrial products. SALES ENGINEERS, Minneapolis, is distributor for stock items.

Houston Air Filter Mfg. Co.—E. M. TOUSSAINT SALES CO., San Jose, Calif., has been named manufacturer's representative for a territory which includes Washington, Montana, Oregon, Idaho, Nevada, Utah, Arizona, and north and central California. JOHN T. DRESBACH SALES CO. was appointed representative for southern California.

Gibson Refrigerator Co., Div. of Hupp Corp.—STRAUS-FRANK CO., Dallas, was named distributor for the Dallas-Fort Worth area. Gibson's Dallas branch—its last factory branch—is being closed. The Chicago factory branch was closed earlier with the appointment of the Sampson Co. as distributor in that area. FOWLER DISTRIBUTING CO., Portland, Ore., was appointed distributor for most of Oregon and parts of Washington.

Research Products Corp.—PHILIP CAPRON, who was formerly associated with American Chain & Cable, Inc., has been added to the sales staff and will serve the Virginia, Maryland, and Washington, D. C. area, with headquarters in Washington.

Primor Products Moves to York Plant

YORK, Pa. — Complete integration of the Primor Products division of Borg-Warner into the York Div. plant here, has been completed, according to an announcement by Henry M. Haase, York president.

The move from Primor's plant in Adrian, Mich. to York was "a matter of consolidation," Haase said, to provide more efficient manufacturing along with other air conditioning units at the larger installation. The Adrian plant will be sold, according to the announcement.

Primor produces central air conditioners for brand-name furnace manufacturers under the name of the individual customer.

These units are designed for addition to furnaces in order to convert the system to year-round use, it was noted.

TYPE 56

R-12 to R-22 ...with the twist of a wrist!

Yes, a water regulating valve adjustable from 60 to 270 pounds by simply turning the knurled cup as illustrated—also available with concealed adjustment when tamper proof regulator is required.

This ease and range of adjustment is just one distinctive feature of a water regulator that is out in front in every department. It is small and compact—fits in!—but it has plenty of capacity, smooth modulation, positive operation, excellent flow characteristics!

Construction is the Marsh quality kind—the kind you know so well: Monel seat beads minimize wire drawing. Direct acting bellows assures long life. There is a provision for manual flushing after installation to remove dirt and grit. Bulletin tells the story.

Buy the Type 56 from your wholesaler

From 60 to 270 psi

Now made in 1" size ...in addition to ⅜", ½", and ¾".

MARSH Refrigeration Equipment

MARSH INSTRUMENT CO. *Sales Affiliate of Jas. P. Marsh Corp.* Dept. D, Skokie, Ill.

Marsh Instrument and Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta
Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

YOU WILL APPRECIATE THE TECHNICAL SUPERIORITY OF PATENTED, EXCLUSIVE

SUPERCHARGER CARBONATORS

YOUR CUSTOMERS WILL APPRECIATE THE

- Higher carbonation
- Peak capacity
- More troublefree operation
- Space-saving compactness

IT'S EASIER, MORE PROFITABLE TO SELL THE FINEST

Jet foamescent Carbonators by Carbonic Dispenser, U. S. Patent No. 2,588,677.

MAIL THIS COUPON TODAY

For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.

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West Coast Plant: 16028 S. Marquardt Ave., P.O. Box 142, Norwalk, Calif.
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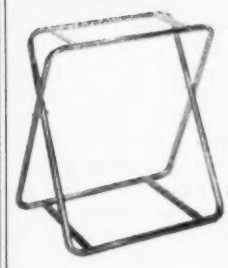
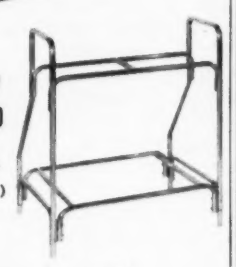
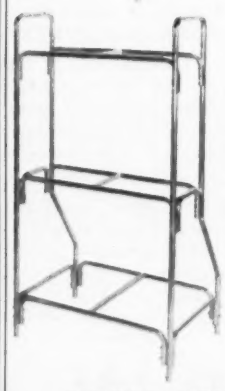
A Must for Sales
A Necessity for Service



101 TW
$9.90
Shpg. wt. 7½ lbs. (2 per ctn.)
Casters $1.75 Extra



202 TW
$13.90
Shpg. wt. 9 lbs. (1 per ctn.)



303 TW
$19.95
Shpg. wt. 19 lbs. (1 per ctn.)

ROOM UNIT DISPLAY STANDS

Made of light but strong Aluminum Tubing — highly polished

A bright clean stand lasting for years . . . a real bargain

Orders Shipped C.O.D.
F.O.B. Memphis, Tenn.

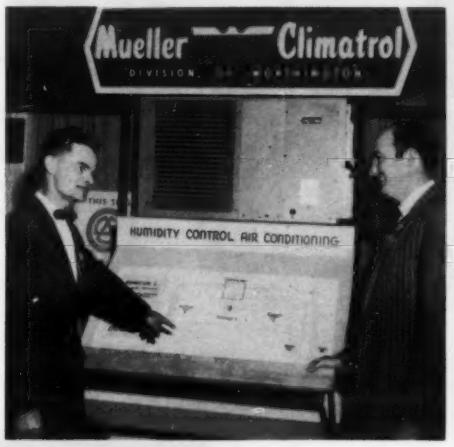
Quantity Discount On 100 or More Units

NATIONAL MFG. CO.
1782 Person
Memphis, Tenn.

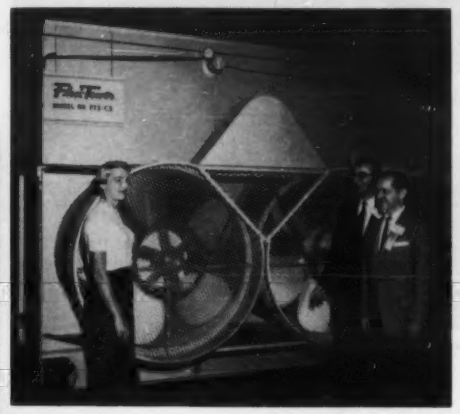
WE CHOSE ALCOA ALUMINUM MILL PRODUCTS

ASHAE Exposition Is Stage Setting for Many New Products

Pictures on this and the other pages of this issue are of products shown at the International Heating and Air Conditioning Exposition recently held in Philadelphia. For further information on any of these products please write the manufacturer. Additional picture coverage of the show will appear in future issues.



HOW HUMIDITY CONTROL summer air conditioner introduced by Mueller Climatrol works under specified conditions is demonstrated by W. A. McLemore, assistant sales manager of Mueller Climatrol (l.), to Robert F. Faulkner of Tyler, Texas.



ADJUSTABLE CAPACITY which allows for variable load conditions and future expansion is a key feature of Baltimore Aircoil Co.'s Flexi-Tower. Mrs. W. E. Kahlert, wife of the BAC vice president, listens as James Hayes, Philadelphia manager, describes the cooling tower to G. B. Priester of Baltimore (c.).

HERMETIC COMPRESSORS made lighter and smaller, and designed specifically for the residential air conditioning market, are these three Bendix-Westinghouse models rated at 30,000, 36,000, and 42,000 B.t.u. capacity, respectively. With them here are company executives Don Wood (left) and John Morrill.

COMPLETE CONTROL center for air conditioning (in the single enclosure at bottom of display) or a split control center (fan and cooling) is offered by Penn Controls, and is being checked over here by John Guerra (left) of Buffalo, and Bob Luscombe and Carlos Morgan of Penn Controls.

JANITROL suspended blower coil and air-cooled condensing unit is described for Herbert Reich of Pittsburgh (l.) by Richard R. Ramsey, Janitrol district manager in Buffalo. At right are Robert Johnke of the Buffalo office and William F. McComas, Jr., of Malvern, Pa.

DESIGNED with cooling in mind, is the new General Electric Downflow Gas Furnace, which provides "warm, filtered, circulated, and humidified air from one compact unit." A matching cooling unit is available for installation beneath the furnace.

15-TON CAPACITY condensing unit in compact design is the Brunner-Metic model with which Pat Newell poses in the foreground. In the rear is a Dunham-Bush model PAC-10 package air conditioner.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

You can't "jail" rust and scale...

But you can stop them with

MICROMET® PLATES

Easy-to-use, low in cost, one charge of Micromet Plates will protect most systems against scale and corrosion for six months. Recommended by leading equipment manufacturers. Get Micromet Plates today from your Refrigeration Wholesaler.

CALGON COMPANY
DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
HAGAN BUILDING, PITTSBURGH 30, PA.
In Canada: Hagan Corporation (Canada) Limited, Toronto

That's right! Peerless has individually sealed and packaged 22 sizes of pumps from its famous end-suction Fluidyne line, in popular sizes from 1 to 15 hp. These versatile, efficient pumps will handle virtually any general purpose pumping requirements. Their clean, compact design means a made-to-order fit in any piping or pumping layout. Their rugged, built-to-last construction makes them ideally suited to installation indoors or out, to duty that's continuous or intermittent. You name the job and there's a Peerless REDI-PAK to handle it. There's performance for your customer and profit for you in the Peerless REDI-PAK line. Write for full information.

PEERLESS *Fluidyne*® REDI-PAK PUMPS

AC NR

Putting Ideas to Work

fmc FOOD MACHINERY AND CHEMICAL CORPORATION®

Peerless Pump Division

Plants:
Los Angeles 31, Calif. and Indianapolis 8, Ind.

PEERLESS PUMP DIVISION
FOOD MACHINERY & CHEMICAL CORPORATION
2005 NORTHWESTERN AVENUE, INDIANAPOLIS, INDIANA

Gentlemen: Please send me immediately a copy of your *Bulletin No. 8-2319.*

NAME _____

COMPANY _____

ADDRESS _____

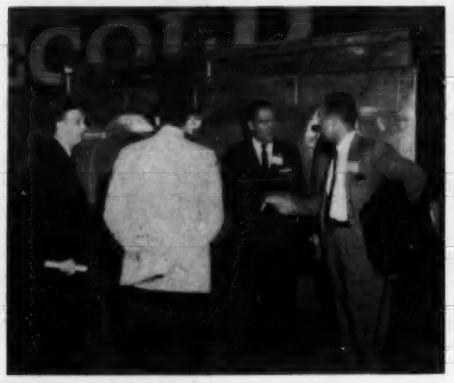
CITY _____ ZONE ____ STATE _____

Manufacturers Offered Myriad of New Products, Ideas In Philadelphia

VERTICAL AIR FLOW air-cooled condenser in 15-ton capacity model was one of new series shown by McQuay, Inc.

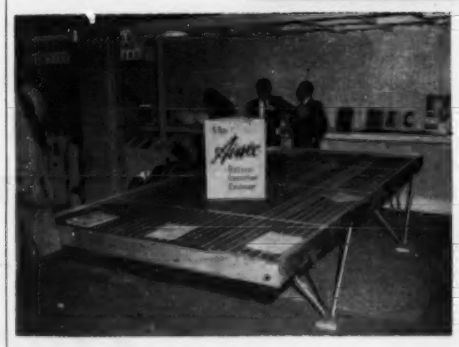
MULTI-LOUVER register for residential air conditioning applications, featured by Air Control Products, Inc., is demonstrated by Kitty Stroup. It is constructed with fins on ½-in. centers for more free air.

HIGH VELOCITY room terminals for all-air systems, made in sizes from 50 to 1,700 c.f.m. for use in large multi-room buildings, was shown to Carrier Corp. booth visitors by Mrs. Pat Marks. These blending boxes are particularly suitable for odor dilution and maintenance of relative humidity despite changes in room occupancy.



EVAPORATIVE CONDENSER, of a capacity to handle installations in any size range, are now being produced in Recold Corp.'s "Dri-Fan" models, says Hy Jarvis (second from right) as he greets visitors to the company's exhibit.

ALL-WOOD CONSTRUCTION is feature of 15-ton "Permatower" introduced by the Marley Co. G. D. Truscott, Marley application engineer (center) holds a wood panel access door while W. W. Stark (l.), application engineer, and Robert R. Poole of Baltimore, look on.



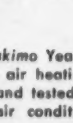
GRAVITY CONVECTION condenser for refrigeration systems, a 5-ton model, got the spotlight in the Edwards Engineering Corp. exhibit.

GIVING SOME THOUGHT to a question posed by S. A. Swain (r.) of Tecumseh Products Co.'s eastern district office is Al Russell, Tecumseh advertising manager. Between them is a new "AU" high speed, 2-pole, R-22 compressor.

You can't wrap the system in cellophane . . .

PROTECT IT WITH BANOX®

Forms a molecular film on all metal surfaces contacted by recirculating water. Condenser, pump and water lines are protected against corrosion. Use at Spring start-up — after acid cleaning—at shut down. Get Banox from your Refrigeration Wholesaler today.



CALGON COMPANY

DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.

HAGAN BUILDING, PITTSBURGH 30, PA.

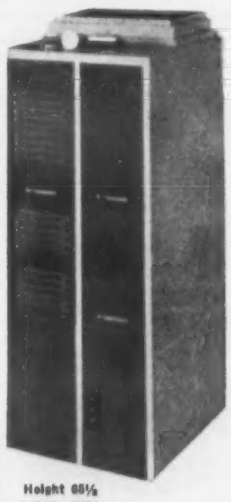
In Canada: Hagan Corporation (Canada) Limited, Toronto

THE ESKIMO YEAR 'ROUNDER

DESCRIPTION:

This is the exceptional *Eskimo* Year 'Rounder, a complete unit in one package which provides forced warm air heating in winter and luxurious air conditioning in summer. A factory built and tested unit which will efficiently and economically provide true year 'round air conditioning.

combines a 75,000 B.T.U. gas-fired furnace and a 1½ ton summer air conditioner.



Height 65½
Width 28¾
Depth 29¼
Shipping Weight, Lbs. 845

FEATURES:

- EMBOSSED STEEL CABINET
- COMPLETELY AUTOMATIC CONTROLS
- HEATING-COOLING THERMOSTAT
- SUMMER-WINTER CHANGEOVER DAMPER
- OVERSIZED BALANCED BLOWER
- HERMETICALLY SEALED REFRIGERATION CIRCUIT
- WATER COOLED REFRIGERATION CONDENSERS
- INSULATED CABINET
- AIR FILTER
- FACTORY TESTED
- ONE YEAR WARRANTY

APPROVED BY BOTH AGA AND UL

SPECIAL AT **$225.00** each

OR $425.00 FOR 2 UNITS

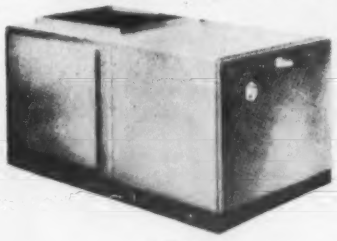
F.O.B. WAREHOUSE, LOS ANGELES

FEBRUARY SHIPMENTS CARRY AN ADDITIONAL 5% DISCOUNT, OR MAY 1st, DUE DATE. We are carrying a large inventory of AIR CONDITIONING UNITS, and are facing a high inventory TAX, on all merchandise in our warehouse, at the close of business on FEBRUARY 28th. ORDERS MUST REACH OUR OFFICE BY FEB. 25th. TAKE ADVANTAGE OF THIS SPECIAL DISCOUNT, OR THE ABOVE DATING BY MAILING YOUR ORDER NOW. THIS APPLIES TO *FEBRUARY* SHIPMENTS *ONLY*.

TERMS: Open if rated with D&B

ESKIMO

Horizontal Air Conditioning Unit



2-Ton

WATER COOLED

HORIZONTAL MODEL No. 3170-200W
Cooling Capacity—BTU/Hr. 24,500
Latent Capacity—BTU/Hr. 8,300
Water Removal—Lbs./Hr. 7.6
Compressor Motor H. P. (230 V.) 2
Refrigerant—F-22
Freon Charge—Lbs. 2.625
Shipping Weight—Lbs. 251

This unit is designed to be used with warm air heating systems. Amazingly compact, the Horizontal saves space. The location of the cooling coil permits installation in attics, crawl spaces, and basements, and in combination with Counter-Flow Warm Air Furnaces.

For additional information, phone, wire or write to:

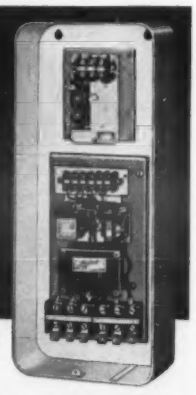
ESKIMO PRODUCTS DISTRIBUTORS

2146 Sunset Blvd., Los Angeles 26, Calif.
Phone DUnkirk 5-2239

Positive Protection against Phase Failure and Phase Reversal

Important to Air Conditioning Systems!

A-B QUALITY



Bulletin 812, Style RF for phase failure and phase reversal protection.

Bulletin 812 relays provide positive and dependable protection against damage to pumps and compressors—as well as the motors operating the same—resulting from phase failure and/or phase reversal.

These relays respond to *all* open phase conditions on a motor branch circuit and immediately remove the motor from the line . . . irrespective of the motor load or circuit arrangement. And if a phase reversal occurs—the motor will be removed from the line—whether it is running or not.

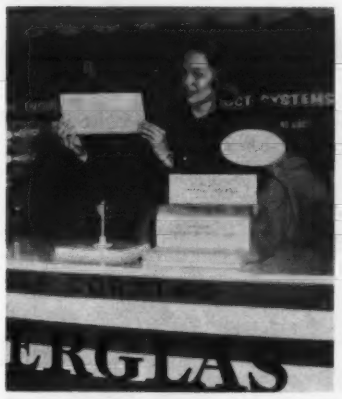
Bulletin 812 relays are available to protect against phase failure, phase reversal, or both. Write:

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY QUALITY | Motor Control

What's New

Pictures on this and the other pages of this issue are of products shown at the International Heating and Air Conditioning Exposition recently held in Philadelphia. For further information on any of these products please write the manufacturer. Additional picture coverage of the show will appear in future issues.



MAT FACED FLEXIBLE duct liner for use in air conditioning installations was demonstrated at the Owens-Corning Fiberglas exhibit.

6-CYLINDER, 20-TON accessible hermetic compressor, is this new Copeland Refrigeration Corp. model which is being checked over by C. M. Hatcher, American Coils Co. (l.), with Rudy Berg of Copeland.

WORTHINGTON CORP. 25-ton packaged unit with multiple compressors has been compacted down to a 72-in. height. Worthington's Barbara Blair can easily reach the top. Unit is shipped completely assembled and wired.

COMPACT AIR HANDLING unit in 3 and 5-ton capacities, for use in residential and light commercial air conditioning, was shown by C. A. Olsen Mfg. Co., and demonstrated here by P. D. Arnold.

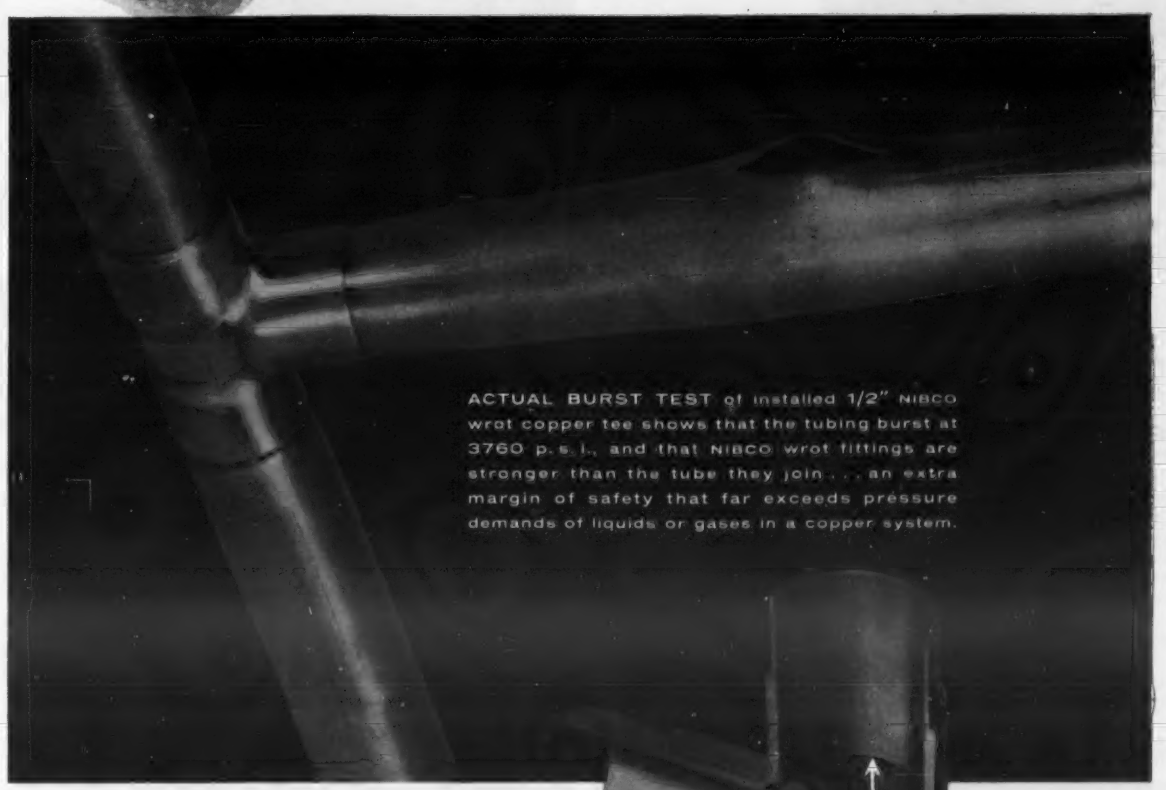
BIG VALVE for big jobs is this type "W" thermostatic expansion valve for water chillers, capacities up to 100 tons with Refrigerant-12 and 180 tons for Refrigerant-22. Don Rentschler demonstrates for Sporlan Valve Co.

"SLIP-IN" ELECTRONIC FILTER for residential applications was introduced by Trion, Inc. Bill Trondle of the company shows how readily it fits into area provided for 2-in. filter. A filtering efficiency of 70% is claimed.

LINE-AIR PERIMETER diffuser for floor or under-window installation was featured by Universal Diffuser Corp.

When you compare copper fittings...

remember David and Goliath!


ACTUAL BURST TEST of installed 1/2" NIBCO wrot copper tee shows that the tubing burst at 3760 p.s.i., and that NIBCO wrot fittings are stronger than the tube they join . . . an extra margin of safety that far exceeds pressure demands of liquids or gases in a copper system.
ZONE OF STRENGTH

Like David of old, NIBCO wrot copper fittings are strong where it counts. Wall thicknesses in the NIBCO "zone of strength" (as shown in the cutaway tee, for example) are not made to the "L" minimum ASA standard, but have heavier than "K" wall thickness of metal...additionally densified in processing. This is but one reason why NIBCO fittings are specified by the nation's leading contractors and service organizations. See your NIBCO wholesaler, or send coupon for ***FREE CATALOG.***

NIBCO

NIBCO INC.—Dept. J-6202 Elkhart, Indiana

Please send "Catalog I" of NIBCO fittings.

name

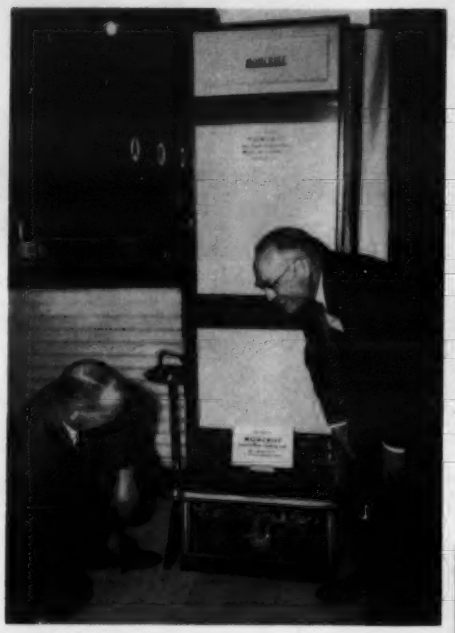
firm

address

city, state

Show Visitors Treated to New Product Displays, Demonstrations

Pictures on this and the other pages of this issue are of products shown at the International Heating and Air Conditioning Exposition recently held in Philadelphia. For further information on any of these products please write the manufacturer. Additional picture coverage of the show will appear in future issues.

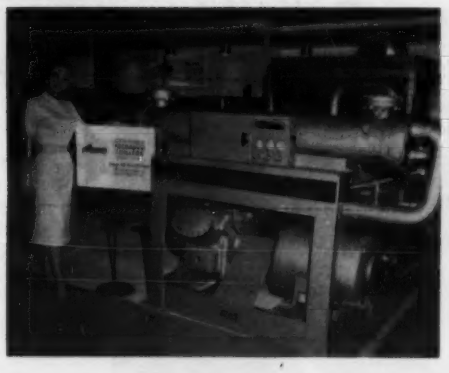


HOT AIR has always been blown in both directions; now a counterflow cooling coil in the Moncrief brand winter air conditioner, Henry Furnace Co., makes it possible to handle cold air the same way. C. W. Rand, Floral Park, N. Y., smiles as Henry applications engineer E. G. Swain blows hot air back and forth.

ALL WRAPPED UP in new "Thermaflex ST" air conditioning duct manufactured by Flexible Tubing Corp. is Eleanor Herling, Miss Philadelphia of 1957-1958.

3-TON "CHILL-A-TRON" packaged water chiller is new product offered by Kritzer Products Div., Peerless of America, with Pat Ballester posing to demonstrate compactness of unit. In background is "Combinex" unit for heating or cooling, designed for installation in closet or alcove.

HOLDING NEW Spencer 20420 type sealed moisture proof thermostat for refrigeration systems are Ted Ballard, sales engineer (l.), and Charles Patterson, assistant product manager of Versailles Products Div., Metals & Controls Corp.

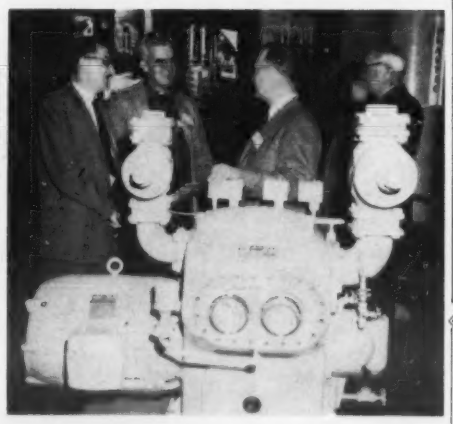


PACKAGED CHILLER complete with control section and set for quick installation in the field is this Acme Industries model DE-60, a 60-ton capacity model.

PARTIAL BY-PASS charcoal filter which is less expensive than normal ones but which is "perfectly adequate" for many applications is shown to J. C. Pennyfeather, Toronto, Can., by Barnebey-Cheney Vice President H. L. Barnebey (r.).

FLOATING VALVE ASSEMBLY and a die cast aluminum body are features of Airtemp's Power-Miser compressor, being described here by Homer Day, district manager, Chicago, to Leon Hughs, district manager of Airtemp's room cooler section. Built-in mufflers make for quiet operation.

REMOVABLE POWER ELEMENT of General Controls' V-400 series thermal expansion valves is shown to Henry V. Sweeney of Washington, D. C. by air conditioning and refrigeration specialist Lee Liepin. The 12-ton valves are available either gas or liquid filled.



AMMONIA, R-12, or R-22 may be used in this Vilter Mfg. Co. close-coupled 65-ton unitary compressor. Floor space savings made possible by the 6-cylinder compressor are discussed by W. W. Fullerton, district manager, Vilter, Philadelphia, R. W. Richardson, Camden, Del., and A. O. Vogel, Vilter vice president, while C. F. Holske, New York district manager, views photographs of existing installations.

AIR POLLUTION DESIGN ENGINEER

Thorough knowledge of electrostatic precipitation field. Expert in high voltage and small air cleaners design. Executive ability to head growing concern with opportunity in its participation. Submit resume in confidence. ELECTRONATOM, Room 3411, 30 Rockefeller Plaza, NYC 20, N. Y.

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MANUFACTURER'S AGENT FOR THERMOMETER LINE

Excellent quality mercury and red liquid filled thermometers. Straight and angle stem. For domestic and industrial hot water, hot oil, steam or refrigeration. Exclusive territories. A good chance to increase your income.

Write to BOX A6171, AIR CONDITIONING, HEATING & REFRIGERATION NEWS giving area covered and lines handled.

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POSITIVE SEALING INDICATORS
... your sign of DEPENDABILITY and QUALITY
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• Pyrex glass, double pressure sealed at sides and ends. • Positive check of refrigerant condition. • Unrestricted full line flow. • Spring-loaded gaskets insure positive seal against leakage. • Guaranteed to 500 psi. • Precision made.

USED BY LEADING MANUFACTURERS ON ORIGINAL EQUIPMENT
Sold by leading wholesalers everywhere
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Illustrated: 200 Series, ⅛" or ¼" female by male flare

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ALLIN MANUFACTURING CO.
410 N. Hermitage Ave. • Chicago 22, Illinois
Over 1,000,000 Liquid Eyes Sold to Date!

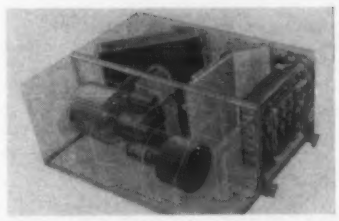
ELECTRONIC FILTRATION in one room or with wet heat systems is possible with Electro-Air Cleaner Co.'s room filter unit. R. J. Farrell of Electro-Air explained that the room unit is especially applicable to sick rooms, conference rooms, and the like.

U.L. & A.S.M.E.
WATER-COOLED CONDENSERS ¼ TON to 15 TONS
and
LIQUID RECEIVERS
for
EVERY REQUIREMENT

Write for our NEW Catalog

STANDARD REFRIGERATION CO.
6034 W. North Ave.
Chicago 39, Illinois

'HIGHLY-STYLED' 1959 Fedders room air conditioner line features a three-button Volume Control center that permits the unit to be operated "as quiet as a mouse with sponge rubber shoes." Found in both cooling units as well as the heat pump models.



YEAR-ROUND 1959 Fedders Adaptomatic heat pump, model HE-936B, provides whole house heating all winter long and whole house cooling during the summer.

Fedders Air Conditioner Line--

(Concluded from Page 1, Col. 2)

are higher or lower than the rated value. If, when the serviceman installs the unit he finds that the voltage at the electrical outlet is between 5-10% higher or lower than it should be, he simply moves an electrical lead to the proper push-on terminal."

Highlight of the Fedders heat pumps is the Custom Four Seasons, model 913-FS.

New Model Has Full-Time Compressor

"Unlike its predecessor of a year ago that had 3,000 watts of resistance heating and a compressor that cycled off at 15° outside temperature, the new Four Seasons has a full-time compressor and requires only 1,800 watts of supplementary heating," according to the manufacturer. "The heating capacity of the 1959 Four Seasons is 14,000 B.t.u. at 25° and 10,000 B.t.u. at 0°.

"An improved main thermostat, which automatically turns the Four Seasons from cooling to heating and back again—when needed, will cycle on the 1,800 watts of resistance heat whenever the compressor alone cannot satisfy to within 2° of the room setting."

Such features as the Fedders defrost action, and 250-watt humidifying element for heating, introduced last year, are continued for 1959.

A Four Seasons deluxe model, 912DFS, has been added to the line. This unit, also 1 hp., has many of the features of the custom unit with the exception that the compressor cycles off at 45° outside temperature and 3,000 watts of resistance elements perform the heating function. As a result of the simpler controlling devices, the deluxe Four Seasons will be less expensive than the custom, it was noted.

Four Other Room Heat Pump Models

Fedders has introduced four other room heat pumps. Since they have no reserve heating, they will be merchandised as a supplementary heat source in northern climates while they will be an adequate sole heat source in warmer areas, the company said.

Also in this series are a 2-hp., a 115-volt 1½-hp., and two 1-hp. heat pumps, one for 115-volt operation.

Two models highlight the straight cooling line. One is the 922C Super Custom, a 2-hp. cooling model equipped with two evaporators—one three-row and one two-row—and two condensers, constructed the same way. The coil sets are mounted in series providing greater cooling capacity than with a standard five-row coil, it was stated.

The other featured cooling unit is the 1-hp. 912-D, for use on 115 volts. For 208 or 230 volts, there are two 1-hp., one 1½-hp., and two 2-hp. cooling air conditioners. In addition, there are two 1 hp. for 115 volts, one of them requiring 7½ amps., and a 1½ hp.

Every unit introduced will be equipped with a twin-cylinder compressor. Also, each unit will have either a three, four, or five-row coil. The cabinets have a zinc-coated finish and an inner gasket has been added to the front rubber seal.

There are 18 models in the Wall-Fit line, including two different Four Seasons heat pump models that can be applied as the sole source of heating and cooling in any part of the country, the company said. They are the Custom Four Seasons, model 12-AWCH, and the Deluxe Four Seasons, model 12-AWDH.

These units are similar to window models 913-FS and 912DFS. Both are 1 hp. in capacity and operate on either 208 or 230 volts.

Straight Cooling Models

In straight cooling models, Fedders is offering 12 1-hp. air conditioners and two 1½ hp. Four of the 1-hp. units are for 115-volt operation while the others are for 208 or 230 volts.

Other features of Wall-Fit models include the volume control, the voltage compensator, and permanent aluminum filters.

The new Adaptomatic series features greater emphasis on reverse cycle heat pump models. This line consists of three heat pumps, in 2 and 3-hp. capacities, and two cooling units.

Featured model is the Custom HE-936B, a 3-hp. unit said to incorporate a unique system of reserve resistance heating. "As a cooling air conditioner, this unit has a capacity of 36,000 B.t.u.," the company stated. "Its heating capacity is 62,700 B.t.u. at 10° below zero.

Each Heat Stage Operates Separately

"The reserve resistance heating, in three separate stages of 5 kw. each, is located entirely within the cabinet. It is fully pre-wired at the factory.

"The unique feature of the supplementary heat source is that each of the three stages operates independently and only when the room thermostat demands it. The first 5-kw. strip is turned on with the compressor when the main room thermostat cannot be satisfied with the compressor alone.

"The other two are controlled by two thermostats that measure the outside air temperature but cycle on only if the room stat requires it. These can be set in the field to turn on the other two 5-kw. stages at temperature levels dictated by local weather conditions. The compressor always functions.

"The 15-kw. reserve heating unit can be adapted to lower kilowatt demand and still meet Underwriters Laboratory approval.

Separate Fan Motors Run Two Blowers

"Separate fan motors are used to run two blowers circulating the condenser air and evaporator air, when the compressor has cycled off from its cooling function, the condenser fan shuts off with it, resulting in an operating economy. Also, when the unit is in its defrost cycle, some resistance heating cycles on and the evaporator fan continues to operate."

The 3-hp. Adaptomatic heat pump is also available without the 15 kw. of resistance heating, although it can be added in kit form. This unit, with a single fan motor, is model H-936A.

Both of the 3-hp. heat pumps are made for 208/220 or 230 volts in single or three phase.

The 2-hp. heat pump, with a 24,000 B.t.u. capacity is designated model HE-924A. Like the custom heat pump, it has supplementary resistance heating in two 5 kw. stages. One is controlled by the room thermostat and the other by a thermostat measuring the outside air.

The 3-hp. cooling model, C-936A, has many of the features of the heat pump of the same size. This model is also available in 208/220 or 230 volts for single and three phase current. The Adaptomatic 2-hp. cooling air conditioner, C-924, is equipped with the same features as the 3 hp., and is made for 230-volt, single-phase operation.

Remote Air Conditioners

Fedders is also offering a line of remote air conditioners. This series has two 3 hp. and a 5-hp. model. A complete set of components, including evaporator-blower sections, horizontal evaporator coils, and "A" coil evaporators, for each of the capacities, is available.

The high-end Custom dehumidifier, C-920, features a "Safety Flowguard," a float mechanism that turns off the dehumidifier when the 10-qt. condensate pan is full. A signal light, tied in with the float, is located on the front of the unit and turns red to indicate a full pan. A built-in humidistat is another custom feature.

The Deluxe model, R-920, does not have the automatic features of the Custom, but operates at the same capacity. Both models are styled in Hawaiian Tan and Sierra White, and both have removable legs and casters so they can be used while on casters, on legs alone, or with the legs removed.

ASHAE-ASRE Merger-

(Concluded from Page 1, Col. 4)

Hess, Greiner & Polland, Los Angeles consulting engineering firm; second vice president is Daniel D. Wile, Recold Corp.; third vice president is Walter A. Grant, Carrier Corp.; fourth vice president is Robert H. Tull, Westinghouse Electric Corp.; and fifth vice president is John Everetts, Jr., Philadelphia. First treasurer is John Fox, Toronto, Canada.; and second treasurer is Franklyn Y. Carter, Detroit Controls Corp.

A. V. Hutchinson, longtime secretary of the ASHAE, will be executive secretary of the new society. R. C. Cross, formerly secretary of ASRE, will be technical director. Burgess H. Jennings will be director of research, a position he held with ASHAE, with headquarters at the society's laboratories in Cleveland.

In June, under the merger plan, a new slate of officers takes over, with Hess becoming president. Since Hess was inaugurated as president of ASHAE at its meeting in Philadelphia late last month, for a very brief term, and having also been a former president of ASRE, he will probably hold the distinction of being the only man to have been president of all three societies.

The official publication of the society will be known as the *ASHRAE Journal,* and the first monthly issue under that name will appear in March.

Individual members of ASHAE and ASRE automatically become members of ASHRAE, holding the highest grade of membership which they have attained in either organization.

Some changes have been made in the meeting plans, as was reported in the Feb. 2 issue. The ASHAE had scheduled a meeting June 7-11 in Vancouver, B. C., Can., which has been postponed, and a meeting will probably be scheduled there next year.

The annual meeting of the ASHRAE will be the mid-year meeting, which will be held June 22-24 at Lake Placid, N. Y. The ASRE had scheduled a meeting in November at Atlantic City, but this has been abandoned.

The semiannual meeting of the ASHRAE will be held Feb. 1-4 in Dallas, and the Second Southwest Heating and Air Conditioning Exposition will be held in the new Dallas Memorial Auditorium at the same time.

Local ASHAE chapters and ASRE sections can continue with their planned local meeting programs on a separate basis through to May of this year. However, they are expected to go ahead with plans for consolidating into a single local organization.

Regional directors will assist in consolidating the local chapters, and this activity will be under the general direction of Daniel D. Wile, chairman of the Regions Central Committee.

STOP

Losing money during your slow season-

LOOK

At how easy it is to keep your mechanics profitably employed all year repairing hermetic compressors with a FRANKELL HERMETIC COMPRESSOR OPENER. Keep your shelves filled with rebuilt units so that during the busy season you can do more jobs in less time at a greater profit. A FRANKELL HERMETIC COMPRESSOR OPENER opens any hermetic compressor up to 20" in diameter. No special jigs or skill required.

LISTEN

To the ring of profits the year 'round. Remember, when you repair hermetic compressors, the profits are big. So ACT NOW! Only $695 Ex Factory. Ask about our rental plan. Export facilities.

FRANKELL MFG. CO., INC.

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NOW...

SERVICE ALL TYPES OF HERMETIC UNITS

with One Valve!

THE NEW KEROTEST HERMETIC SERVICE KIT

Note these Features

★ Eliminates the need for a separate valve for each hermetic unit serviced. Master valve is furnished with adaptors and stem extensions to service specific units.

★ Stainless steel stem provides long service life—*at no added cost.*

★ Available with or without compound gauge in large heavy gauge steel box.

★ Many other time and cost saving features.

See your Kerotest wholesaler today.

Ask for No. 4321 or 4321G (with gauge).

KEROTEST

KEROTEST MANUFACTURING CO.

2502 Liberty Avenue

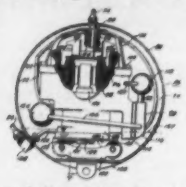
Pittsburgh 22, Pa.

PATENTS

Week of Oct. 28

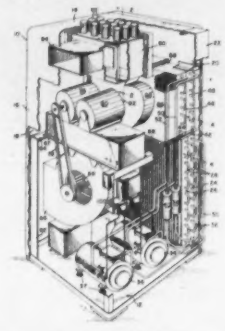
2,857,746. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich.

1. Refrigerating apparatus comprising a cabinet having a food storage compartment and a machinery compartment, a refrigerant evaporator arranged to cool said food storage compartment, a casing extending into said machinery compartment, refrigerant conduit means to conduct refrigerant from said casing to said evaporator,



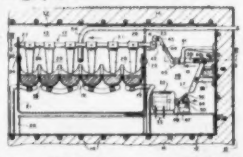
return conduit means to conduct refrigerant from said evaporator to said casing. . . .

2,857,747. AIR CONDITIONING APPARATUS. Calvin D. MacCracken, Tenafly, John J. Rioux, Woodcliff Lake, and George H. Miles, Tenafly, N. J., assignors to Jet-Heet, Inc., Englewood, N. J.



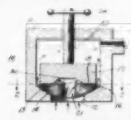
1. In an air conditioning apparatus for supplying cooled air to distribution ducts, in combination, an upright casing, a refrigerant compressor located in the lower portion of said casing, a condenser coil in the lower portion of said casing and connected to said compressor to receive refrigerant therefrom, an evaporator coil located above said condenser coil and connected thereto to receive refrigerant therefrom, said evaporator coil being connected to said compressor to return refrigerant thereto. . . .

2,857,748. ICE MAKER. James K. Nelson, Grove City, Ohio, assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



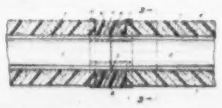
1. In an icemaker, a mold including an ice pocket, a member disposed adjacent said pocket, means supporting said member for independent rotary and linear movement, means responsive to movement of said member for loosening and removing ice from said pocket, and means for imparting movement to said member, said last named means comprising a crank connected to said member, and means including a second member universally connected to said crank and adapted to apply a force to said crank along a line forming an acute angle with both the plane of movement of said crank and a plane containing the axis of rotation of said crank and the connection between said second member and said crank.

2,857,927. VALVE CONSTRUCTION. Harvey S. Pardee, Highland Park, Ill., assignor to The Creamery Package Mfg. Co., Chicago, Ill.



1. A valve construction through which a liquid dispersion under pressure is caused to flow to effect homogenization of the latter, said valve construction comprising an annular valve member provided with a center opening, said member being formed from a strand of resilient material of uniform cross section wound about a rotating mandrel to form a plurality of overlapping helices with the spacing between the turns thereof substantially uniform. . . .

2,857,931. INSULATED PIPE AND METHOD OF MAKING THE SAME. William R. Lawton, Akron, Ohio, assignor to The R-W Mfg. Co., Barberton, Ohio.



1. An insulated pipe unit for conveying fluids comprising a length of pipe, a thin bonding skin or layer on said pipe outer surface, and an outer body of an insulating composition comprising a foamed cellular synthetic resinous composition having an effective thermal resistance substantially between -20° F. and 340° F. bonded to said thin layer, the outer exposed surface of said composition being smooth and substantially free of open voids.

(To Be Continued)

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Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

REFRIGERATION ENGINEER — College graduate, 18 years' experience home freezers and household refrigerators, last five Chief Engineer of small company. Extensive work on capillary systems, cabinet construction and laboratory testing. Working knowledge of tooling and overall manufacturing procedures. BOX A6182, Air Conditioning, Heating & Refrigeration News.

YOUNG MAN with 12 years' experience in the sheet metal and warm air heating business. Last 8 managing a shop. Some advance schooling. Desires non-selling position in heating and air conditioning field. Can design, figure, service, manage. BOX A6183, Air Conditioning, Heating & Refrigeration News.

WANTED, ADDITIONAL lines of equipment—Coils—air conditioners, refrigeration equipment, grills, compressors, condensers etc. As manufacturer's representative in western Michigan. Now have unit heaters, gas conversion burners, small boilers. Two representatives, both men with years experience in air-conditioning and refrigeration with major manufacturer. WILMOT'S, 1067 Bridge St., N. W., Grand Rapids 4, Michigan.

POSITIONS AVAILABLE

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data, to BOX A6172, Air Conditioning, Heating & Refrigeration News.

AIR CONDITIONING Product Engineer—Leading manufacturer of air conditioning and refrigeration equipment has opening for project design engineer in newly established engineering section on heat pump and residential package air conditioners. Desire graduate engineer with at least 2 years' design experience on residential air conditioners and refrigeration products. All replies held in strict confidence. Send short resume to BOX A6173, Air Conditioning, Heating & Refrigeration News.

MANUFACTURER'S AGENTS for a complete line of air and water-cooled central air conditioning equipment, both commercial and residential. Desire agents already established in heating and air conditioning, calling on wholesalers with OEM accounts. Give details in first letter stating area covered and other lines handled. BOX A6177, Air Conditioning, Heating & Refrigeration News.

A DIRECT factory supervisor will be employed by commercial refrigeration manufacturer (complete line) for the state of Pennsylvania. Will involve working with present dealers and selling to food market chains and wholesale grocers. Experience in this line necessary. If your future seems dim in your present connection—or if you are looking for a more challenging position with greatly increased earning power, write BOX A6185, Air Conditioning, Heating & Refrigeration News.

EXCELLENT OPPORTUNITY for above average trained service man, in sunny Florida, who has had two or more years' experience with Chrysler Airtemp heating and cooling equipment. Year round position, vacation, health insurance, open shop. In reply, state age, marital status and experience. Attach recent photo. BOX A6187, Air Conditioning, Heating & Refrigeration News.

WANTED — WHOLESALE salesman for a Carrier distributor located in large Mid-Western city. Must have air conditioning and heating background. Salary, percentage on sales and expenses. Write BOX A6188, Air Conditioning, Heating & Refrigeration News with complete resume and picture if possible.

SALESMAN—ENGINEERING graduate preferred. Heating: residential, commercial and light industrial. Cooling: residential and commercial. Must draw plans, take off materials, write up proposals, sell and supervise. Person needed to replace engineer who was promoted. Commission. If you cannot sell and supervise $100,000 to $150,000 per year, do not apply. Must have car. $12,000 per year potential. Six years' experience plus college or 10 years without college degree. Thirty-five year old company. Write P. O. BOX 865, Bristol, Virginia.

AIR CONDITIONING service man—Between age 25 to 40. Experience necessary in commercial and residential air conditioning. Growing concern with employee benefits. Write HAGER-FOX—Attention, Arne R. Laurila—1115 S. Pennsylvania Avenue, Lansing, Michigan.

SALESMEN WANTED—The Chrysler Airtemp Air Conditioning and Heating Distributor in the north New Jersey Area is on the move. Join this young, energetic organization for greater earnings. Only men who have had experience in sales, layout, and some service know-how need apply. Apply in writing only to J. H. MOUNT, 13 Maple Ave., Red Bank, N. J. outlining qualifications.

EQUIPMENT WANTED

WANTED NEW 3 and 5 h.p. self contained air conditioners with open drive compressors. Give full details. Write BOX A6185, Air Conditioning, Heating & Refrigeration News.

WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shut-off valves, controls, relays, dehydrators, units, tubing fittings, etc. All sales on a cash close-out basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, New York 9, N. Y. ORegon 3-7210.

EQUIPMENT FOR SALE

FOR SALE: Large quantity of refrigeration Kold Hold Plates. Less than distributor cost. Sizes: 79—22" x 30" and 74—22" x 48" at substantial savings under distributor costs. Brand new in original crates. Terms: C.O.D. or check with order. Write for prices. JOS. F. PALEN, INC., 112 Hennepin Ave., Minneapolis 1, Minnesota.

COMPLETE HIGHSIDE and low side refrigerator systems. P91 compressor 115 V. 50/60 cy. F-12 Evaporator: 15¾" wide x 5¾" high x 12¾" deep, and static condenser. S-88 compressor 115 volts 60 cy. Freon 12; Evaporator 11" wide x 11½" deep x 9" high, and static condenser. Systems are charged and ready for installation. Sold $36.00 each FOB Chicago, Illinois. Send for free catalog on money saving refrigeration values. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

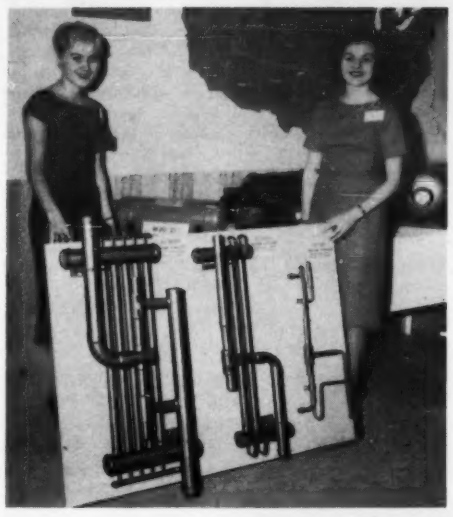
BUSINESS OPPORTUNITIES

FOR SALE—Established Heating and Air Conditioning business on Florida's West Coast. Two nationally advertised franchises—over 500 satisfied customers. Owner has other interests. Asking price $25,000.00. BOX A6184, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

CONTROLS & RELAYS repaired like new. UNITED CONTROL REPAIR COMPANY, new address: 151 E. 126th Street, New York 35, New York.

Philadelphia Show Featured



PRESSURE STABILIZERS for stabilizing high-side and low-side pressures in large systems were in the foreground at the Heat-X, Inc. display. In the back are inner-fin heat interchangers.

DEMONSTRATING SLIDE-OFF cover for Coolerator 2-hp. self-contained central air conditioner is Harry A. Doull, Coolerator representative in eastern Pennsylvania. Looking on (l. to r.) are Glen Dunkleberger, Earl Cromwell, and Samuel Mummert, all of Mummert Bros., Harrisburg, Pa.

GALVANIZED centrifugal fan cooling tower with circulating pump attached (at bottom) is shown by C. R. Crain, production manager for Goodfellow Co., Inc. (r.), to Harry A. King of New York City.

NEW "JUBILEE" quality wet base oil boiler for residential heating by steam or hot water captures attention of Frank Coffin of Cornwells Heights, Pa. (l.) as O. F. Jenkins, sales representative for Burnham Corp., describes features.

WANTED

SERVICE MANAGER—VENEZUELA

Venezuelan distributor for Westinghouse Air Conditioning and Air Handling products requires an experienced Refrigeration Mechanic and Top Quality Craftsman to supervise shop activities and installation of packaged and large central plant air conditioning systems.

Persons applying must have minimum high school education, five years' experience, proven ability to supervise large organization and have a good working knowledge of the Spanish language. Forward resume, references and recent photo to:

C.A. La Casa Electrica
Air Conditioning Department
Apartado 126
Maracaibo, Venezuela

A Bit of Everything

Pictures on this and the other pages of this issue are of products shown at the International Heating and Air Conditioning Exposition recently held in Philadelphia. For further information on any of these products please write the manufacturer. Additional picture coverage of the show will appear in future issues.

CYCLING THERMOSTATS with multiple circuit selector switch were featured by Ranco, Inc. M. S. Vidis and C. V. Haueisen, Ranco sales, show the model C21 designed to operate window or unit air conditioners under cross ambient conditions for cooling, heat-cool, or reverse cycle operation.

NEW 15-TON Typhoon air-cooled condensing unit with a single compressor and its matching low-side air handling unit in foreground are exhibited by Mary Jane Mangler, a "Miss Philadelphia." This Typhoon Air Conditioning Co. line runs from 3 to 15 tons' capacity.

ZONE CONTROL PACKAGE for combination hot and chilled water systems is described by E. V. Harwood, regional manager, White-Rodgers Co. Sam A. Civilette of Fredonia, N. Y. watches simulated operation of the "Fashion Thermostat" which activates the 3-way by-pass valve, located on a convector in an actual system.

ASME RATED relief valve for hot water boilers that meets the new FHA minimum property requirements is indicated by Joseph C. Keegan (l.) of Watts Regulator Co. to Richard Clary of Spotswood Parker Co.

"CON-VOL" HIGH velocity air handling units that won a gold medal for performance at the Brussells World Fair is shown by D. Gorchev (r.), engineer for Air Devices, Inc., to Armin F. Held of Betzdorf, Germany.

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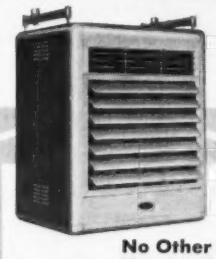

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Optional Dual-Fuel
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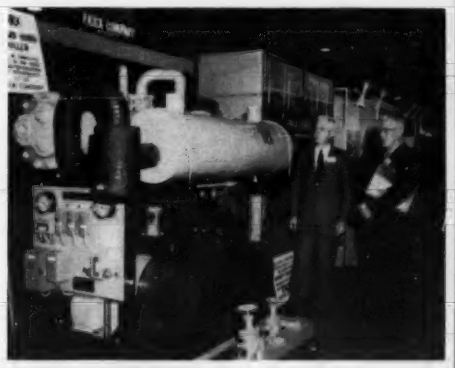
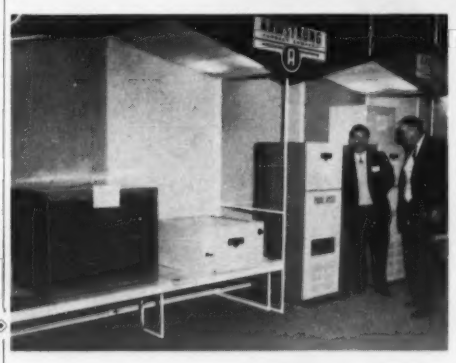
"Easy-Balance" Hangers
Stainless Steel Burners

HASTINGS AIR CONTROL, INC.
OMAHA 5, NEBR.



NEW 60-TON FRICK packaged liquid chiller with 4-cylinder "Eclipse" compressor is shown by Terry Mitchell (l.), Frick Co. advertising department manager, to Howard L. Dressler of Chillicothe, Ohio.

PRODUCTION starts March 1 on 10 and 15-ton air-cooled gas air conditioning units, for delivery starting April 1, says C. B. DeBerry, Jr. (r.), president of I.C.E.D. Inc. Lydia O'Connor helps draw attention to the new unit.



FOR YEAR-ROUND air conditioning, components offered by Armstrong Furnace Co. are (left to right) direct-driven condensing unit assembly, down-flow evaporator unit, and counterflow furnace-filter arrangement, being checked over here by Dan Passty of Chattanooga, Tenn., and P. Y. Mathews of Armstrong.

"SANACOUSTIC" SYSTEM of heating, cooling, and sound control displayed by Johns-Manville Sales Corp. is studied by A. G. Townsend, J-M salesman (l.), and W. A. Jack, chief of the acoustical engineering section of the J-M research center.

DIVISIONAL SALES MANAGER OPENINGS-

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with

Large Manufacturer of Commercial Refrigeration, contacting distributors and chain accounts.

Salary, expenses, incentive plan and other benefits.

Please state age, past experience and include recent photograph.

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Air Conditioning, Heating & Refrigeration News
450 West Fort Street
Detroit 26, Michigan

CHIEF ENGINEER
AIR CONDITIONING

An excellent opportunity for the right man to guide and supervise an entire sales staff on engineering matters. Large Chicago Contractor requires a man with extensive heating, ventilation and air conditioning background from a contractor's level, to head engineering department. Must have knowledge of systems from residential through turbo installations. Man with leadership ability will find this an attractive offer. Compensation based on ability.

Write Box A6176
Air Conditioning, Heating & Refrigeration News

ARE you in need of a "just right" man to fill a slot in your organization—the man you are looking for will be reading the

NEWS' CLASSIFIED ADS

CHIEF ENGINEER
Bulk Milk Coolers

Excellent opportunity for man with good refrigeration background and experience in all phases of Bulk Milk Cooling for farms. Write either address below giving all details, Education, Experience, and Earnings. Interview at Smyrna, Delaware or Niles, Michigan.

S. D. VanderWeg
Tyler Refrig. Corp.
Niles, Mich.

H. E. Wickham
Wilson Refrig. Inc.
Smyrna, Del.

Exposition Shows Industry Ready for Replacement Market--

(Concluded from Page 1, Col. 5)

ments in such systems was noted, with some almost incredibly compact models in terms of the capacities provided. There was at least one model which incorporated boiler, water chiller, and fan coil unit, all in one piece.

Increased Interest In Heat Pump Shown

Increased interest in heat pumps was evidenced by the fact that more of the manufacturers who are seriously interested in year-round air conditioning have introduced heat pump models. A wider range of types and sizes was also in evidence.

Broader application of electric resistance heating will be possible through the use of such developments as an electric perimeter air distributing system having a heating element in each zone (which could be tied in with a comfort cooling system), and a special radiant cable to be incorporated in ceilings under the plaster.

Improved Grilles, Diffusers Available

Air diffuser and grilles are available in a greater variety of designs, and with improved "throw" regulators, so as to provide more draft-free air distribution. More and improved designs of perimeter and floor registers are being provided. There were also two exhibits of floor construction modifications that are designed for use for heating and cooling air distribution.

For central high velocity systems there are improved air mixing and distributing units for floor, under-the-window, and even ceiling installation. New methods of controlling air volume and temperature are available, and one system provides a separate blower for each space but reverses air circulation according to the heating or cooling phase.

High-Speed Compressors Continue Making News

In the bigger systems, the high-speed refrigeration compressor continues to make news. Whereas not too long ago it was considered remarkable when a 7½-hp. reciprocating type compressor was run at 1,750 r.p.m., now there are lines with the whole range of models up to 75 hp. operating at the higher speeds. The end result is higher capacities with smaller equipment.

Package air conditioners have achieved performance improvement through changes in coil design, and such techniques as step control of the compressor (or compressors, as many larger ones used multiple compressors). More "split" systems for commercial and industrial applications are becoming available.

In the smaller condensing units, a wider range of models is being provided to match more accurately the loads likely to be encountered, particularly in residential air conditioning applications.

Gas air conditioning systems made their appearance at Philadelphia, both the absorbent type, and also a gas engine system to drive a conventional type refrigeration system.

Large air handling units were shown with improved designs that permitted reductions in space and weight of as much as 25%, and some equipped with centrifugal fans handling large quantities of air at approximate 4 in. static pressure.

Control systems, taking advantage of advances in electronics techniques, have moved in the direction of more complicated systems (as assembled by the controls manufacturer) but which ease the work done by the installer and operator of air conditioning systems, and are aimed at being more fool-proof.

A centralized control system for a larger system, using push-buttons and a slide projection screen, enable an operating engineer to remain seated in front of the control console while he monitors and adjusts temperatures in any area of a building.

Simpler Wiring for Smaller Controls

Controls for smaller systems show a tendency to factory "packaging" that permits simple wiring on the job. Other new control developments that came to light at the Exposition:

A pneumatically operated high velocity air valve that eliminates the need for air motors and linkage mechanism; a radiant heat thermostat with a bellows which responds to the combined or individual influence of radiation, convection, or air temperature; a sensitive control for furnaces using a thermistor detector and transistorized modulator valve that acts directly on the burner but permits continuous air circulation.

Possibly the widest range of new developments is in air cleaning devices. Briefly, these include an electronic filter that can occupy the same space as a conventional filter; a plate type electronic air cleaner; a filter made of specially developed synthetic fibers bonded in an interlocking pattern, and treater with a bacteria killing germicide; an electrostatic air filter using layers of woven plastic fibers held under spring tension, its characteristics being maintained and increased by the through-flow of air; a new space filter based on an original development for the A.E.C.

Ansul To Distribute Ucon Refrigerants--

(Concluded from Page 1, Col. 2)

ment to refrigeration parts wholesalers.

According to Ansul's L. C. McKesson, vice president-sales, the new arrangement "will enable Ansul and Carbide to serve the refrigeration wholesaler in the best way possible. We are pleased about representing a company with such long-term experience in producing, handling, and distributing pressurized gases."

John R. Hulten, manager, Fluoro-carbons Div. of Union Carbide Chemicals Co., said: "This move will put Ucon refrigerants in the hands of a firm with 42 years' experience in the industry."

Ansul services 48 states out of five regional offices in Milwaukee, Paoli, Pa., Burlingame, Calif., Cleveland, and Kansas City, Mo. Ansul also markets a line of refrigeration accessories. It will distribute a complete line of Ucon brand refrigerants in 10, 25, and 145-lb. cylinders.

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RADIAL UNIT COOLERS
NOW IN
ALUMINUM CABINETS
The New McQuay Radial Unit Cooler—Eight compact aluminum cabinet models ranging from 2,600 to 14,000 Btu/hr at 10° T.D. All have the newly designed hinged aluminum drain pan for easy installation and maintenance.
for LONGER LIFE
LIGHTER WEIGHT
BETTER PERFORMANCE
The new line of McQuay aluminum cabinet radial unit coolers is not just the best—it's the very best! You not only get longer life, but aluminum construction means a more attractive appearance and more ease of handling as well. The new hinged drain pan is a standard feature and all McQuay radial unit coolers are supplied with the famous McQuay Ripple-Fin coils which incorporate "Tube within a tube" heat exchangers without additional cost. For the very best radial unit coolers in every way, use McQuay. See the McQuay wholesaler in or near your city, or write McQuay, Inc., 1607 Broadway Street N.E., Minneapolis 13, Minnesota.
McQuay Means Quality
McQuay units feature the exclusive Ripple-Fin coils which create maximum turbulence and have wide, full fin collars that act as automatic spacers to form a tube around the coil tube for positive, permanent bond, greatest heat transfer and protection.
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